BANCA NAZIONALE DEL LAVORO
QUARTERLY REVIEW

ROME

BANCA NAZIONALE DEL LAVORO

HEAD OFFICE: ROME

VIA VITTORIO VENETO, 119

Condensed Statement of Condition, September 30, 1956

ASSETS	(Lire)	LIABILITIES	
Cash, Balances with Banks & Money at call	204,300,173,330	Capital	1,150,000,000
Investments: Govt. & semi-Govt. Securities & Treasury Bills	98,766,883,111	Ordinary Reserve Fund	7,315,000,000
Investments: Other Securities	8,277,771,758		8,465,000,000
Contango, Advances on Securities & Loans	288,701,182,691	Deposits & Current Accounts	645,845,120,853
Bills receivable	196,382,651,568	Cheques in circulation (*Assegni Circolari*)	19,911,582,607
Sundry accounts	4,202,815,589	Bills for collection	40,033,557,293
Premises, Furnitures & Fixtures	1	Guarantees & Acceptances for A/C of Customers	61,829,030,338
Customers' Liability for Guarantees & Acceptances	61,829,030,338	Sundry Accounts	68,239,969,125
	862,460,508,386	Staff individual Retirement Accounts	14,694,207,118
		Unearned Discount & other unearned Income	3,442,041,052
			862,460,508,386
Securities deposited by Third Parties	239,491,611,038	Depositors of Securities	239,491,611,038
Special guaranteed Accounts	11,652,562	Accounts guaranteeing special Accounts	11,652,562
Staff Assistance & Retirement Fund - Securities deposited by the Bank as Guarantee	15,325,115,200	Bank's Securities guaranteeing Staff Assistance & Retirement Fund	15,325,115,200
	1,117,288,887,186		1,117,288,887,186

AUTONOMOUS SECTIONS FOR SPECIAL CREDITS

SECTION FOR CREDIT TO MEDIUM AND MINOR INDUSTRIES

Capital, Reserves and Government Guarantee Fund L. 3,233,512,860

SECTION FOR HOTEL AND TOURIST CREDIT

Aggregate Capital and Reserves L. 844,523,600

SECTION FOR CO-OPERATIVE CREDIT

Capital and Reserves L. 2,666,554,713 - Government Guarantee L. 2,000,000,000

SECTION FOR MORTAGE CREDIT

Aggregate Capital and Reserves L. 2,138,457,994

SECTION FOR CINEMA CREDIT

Aggregate Capital and Reserves L. 914,910,327

BANCA NAZIONALE DEL LAVORO QUARTERLY REVIEW

Vol. IX, No. 39, December 1956

SUMMARY

In the article entitled « *Some Characteristics of Italian Economic Development, 1950-1955* », Vera C. Lutz analyses — within the limits allowed by the available statistical material — some of the less widely discussed features of Italy's rapid economic expansion of recent years. She examines the factors which have helped to determine the high rate of income growth, the pattern of investment, and their effects on employment and productivity.

The national income statistics indicate that the gross national product rose by over 5 per cent per *annum* in real terms, and that gross investment was running at a rate of between 20 and 23 per cent of the gross product. The active capital resources of the economy were further strengthened by the bringing into operation of previously unused capacity. It has been a source of some surprise, therefore, that so small an inroad was made on unemployment and on the poverty of the masses of so-called « under-employed ». A very rough estimate places the increase in total employment over the five years at less than 5 per cent, the increase in non-agricultural employment being somewhat higher in view of the decline that is presumed to have taken place in agricultural employment. Thus total employment probably grew no faster than in many full employment economies. And the experience of the period casts doubt on the assumption that high rates of income growth and investment — on which the « Vanoni Plan » so largely relies — are in themselves an adequate solution for the unemployment problem.

In looking more closely at the nature of the development process — and particularly of industrial development — during the years under review, a distinction must be drawn between that part of the economy for which employment, output, and earnings statistics are all reasonably good, and that part for which some or all of these statistics are poor or non-existent. The part of Italian industry which is comparatively well-documented, and which is referred to in the article as « Group I » of industry, comprises most of the sectors (outside of construction) which are predominantly organised in the form of medium- or large-scale units of production: viz. mining, textiles, engineering, metallurgy, chemicals and allied trades, construction materials, paper, printing, leather, and electricity. This industry-group is essentially that which is well covered both by the index of industrial production and by the Ministry of Labour employment statistics. Although a large part of industrial investment must have gone into this important group, the increase in employment in the group during the period was extremely small — about 2 per cent in the numbers employed, and about 4 per cent in man-hours worked. The group absorbed perhaps no more than 40,000 additional employees in five years.

Evidently, the capital investment in this industry-group served more to increase the « capital-depth » of a constant occupied labour force than to broaden the employment base. The capital deepening, to the extent that it took the form of increased mechanisation in the individual industries, was the primary factor responsible for the marked improvement in average productivity per man-hour (amounting to something like 57 per cent over the five years) in the group. In part, however, it took the form of an increase

in the relative weight — in terms of employment as well as of output — of the more capital-intensive, as opposed to the less capital-intensive sectors. The capital deepening process, though partly due to technological factors, to the exploitation of new resources, and to changes in demand, was also encouraged by rising wage-rates.

The workers in this industry-group enjoyed a rise in real wage rates which may be estimated as amounting, in terms of the goods they *consumed*, to at least 12 per cent. The rise in terms of the goods *produced* by this industry-group, and therefore in the real cost of labour to the employer, is more difficult to estimate, but it was certainly much higher — probably over 30 per cent.

It is emphasized that « Group I » of industry accounted for not much more than half of total industrial employment in the 1951 Census. Its comparative smallness makes it hasardous to generalise from the experience of this industry-group to that of the remainder of Italian industry and still less to the remainder of the entire Italian economy.

A large part of the remainder of Italian industry (including the food, clothing, wood and furniture trades, and small engineering) consists of artisan, and other very small firms, to which collective wage contracts rarely apply, and for which statistics of earnings levels as well as of employment are lacking. Similar conditions apply to commerce. And for still other sectors, even of the non-agricultural economy, viz. construction and transport, employment statistics are again poor, although it is evident that these two sectors must have absorbed several hundreds of thousands of additional employees during the period. Where the remainder of the aggregate increase — of possibly close to a million — in the numbers employed outside of agriculture went cannot be definitely established. It seems to follow merely from a process of elimination, however, that the bulk must have found their way into the small-scale, labour-intensive, and other family-type businesses which abound in those manufacturing industries that are classified in the article under « Group II », and into commerce. The development process of the period thus seems to have been of a dual character. In one area of the economy, covering « Group I » of industry, construction, transport, and limited zones (roughly coincident with those under effective trade union organisation) within « Group II » of manufacturing industry and within commerce, real wage rates, and in some instances also profits, rose substantially. On the other hand, the additional employment of the period went not so much into this area of the economy as into that which is predominantly the province of artisan, and other tiny firms, and which was not only poorer to start with, but probably also enjoyed smaller gains in average earnings over the period than did the more prosperous area. It would thus seem not merely that the volume of unemployment was not significantly reduced, but that a good part of the additional employment of the period took place in activities where income levels fall below the « tolerable » minimum.

This account — which is admittedly partly conjectural — of the economic development process of the period 1950-1955 depicts it as an uneven one, the increase in income being very largely concentrated among the numbers who were already employed and especially among those who were wage- or profit-earners in the activities that are mostly in the hands of medium- or large-scale firms. In order for the increase in prosperity to be more evenly spread in future, it would be necessary, the author argues, for the core of Italian industry comprised in « Group I » to expand employment more rapidly than in the past. This implies that investment would have to be less heavily concentrated in the highly capital-intensive sectors, and that prices must be kept competitive in international markets, in which a key role still belongs to the relatively labour-intensive sectors

of textiles and engineering. This would mean in turn that wage and profit restraint must be exercised in the more prosperous area of the economy.

Mrs. Lutz sums up by saying that the experience of the period 1950-55 provides an illustration of the choice which inevitably faces any economy that is far from having reached full employment. The Italian economy may go on developing in a way which allows the income levels of the more prosperous groups to continue rising at a rate comparable with that achieved in recent years, and comparable with what could unquestionably be afforded in an economy which had already reached full employment. *Or* it may follow a direction which leads first and foremost to a reduction in the numbers of the unemployed, and an improvement in the levels of earnings of the large part of the population which is at present on or below the « poverty-line ». The third possibility — that of making rapid strides in both directions at once — would require a much larger investment programme than can at present be realistically contemplated.

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V. Paretti and G. Bloch contribute a comparative study of the volume, structure and development of « *Industrial Production in Western Europe and in the United States, 1901 to 1955* ».

After a brief description of the methods employed, the study describes the distribution of industrial production in 1955 between the individual countries of Western Europe. The authors then examine the development of industrial production between 1901 and 1955 in Western Europe as a whole, in each of the various Western European countries and in the United States. In comparing the rate of development in the United States with that in Europe, they show that the « falling-behind » of Europe was principally due to the impact of the two world wars on European industrial production.

The structure of industrial production — that is, the distribution between the various branches — differs from country to country. But between 1901 and 1955 the structural changes followed the same course everywhere: the metal products and chemical sectors increased at the expense of the food and textile industries, while the relative share of the basic metal industries remained almost unchanged.

The study concludes with an examination of the volume and development of industrial product per head over the same period, both in Western Europe and in the United States. A detailed account of the methods of calculation and supplementary information is contained in the annexes.

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The Special Account procedure, a variant of the familiar technique of variable legal minimum reserve ratios, is a unique Australian contribution to the art of central banking. It was devised in 1941, primarily to meet the needs of credit control during the war, but the banking legislation of 1945 made it part of Australia's peace-time system of central bank control.

The procedure has now been in use for fifteen years. Prof. H.W. Arndt, in his article « *The Special Account Procedure as a Technique of Central Bank Control* », assesses its merits as a central banking technique in the light of a detailed study of the

Commonwealth Bank's special account policy over this period. He finds that the Special Account procedure has proved to be a powerful and flexible instrument which has, for the first time, given the Australian central bank adequate control over trading bank liquidity. But the appropriate use of special accounts in the difficult conditions of almost continuous inflationary pressure has been no easy task. The Commonwealth Bank has experimented with a variety of special account policies, including an unsuccessful attempt to operate on the basis of voluntary adherence by the trading banks to conventional liquid asset ratios. Its most recent policy appears to assimilate special accounts closely to the New Zealand Reserve Bank's use of variable minimum reserves to keep trading bank liquidity at low levels but relieve pressure by central bank loans at penal rates.

The Banca Nazionale del Lavoro assumes no responsibility for opinions or facts stated by authors whose contributions are published in the present Review.

All communications regarding the Review should be addressed to Banca Nazionale del Lavoro, Ufficio Studi, Roma, Via Vittorio Veneto, 119.

Editor: Dott. Luigi Ceriani - Ufficio Studi, Banca Nazionale del Lavoro

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Stabilimento Aristide Staderini - Roma - Via Crescenzio, 2

Some Characteristics of Italian Economic Development, 1950-1955

1. Introduction.

It has frequently been remarked that the rapid expansion of the national product and the high proportion of total resources devoted to investment purposes, during the last five or six years in Italy, have been accompanied by what appears to be a disappointingly small improvement in the level of employment, and that, despite the special measures taken to encourage industrial development in the Mezzogiorno, where the dual problem of unemployment and excessively low incomes is at its worst, progress in that direction also has been slow.

Since it is on the continuance of high rates of income growth and of investment that the « Vanoni Plan » (1) largely pins its faith as the means of overcoming unemployment and the extremes of poverty within a decade, it seems opportune to take — in so far as the available material allows — a more detailed look at what has actually happened during the past five years or, roughly speaking, since the Italian economy passed out of the stage of « post-war reconstruction » into that of « development ». What kind of development process has this been? And does the answer to this question provide a pointer to changes in direction which the process would need to make in the future in order for the aims of the « Vanoni Plan » to be realised.

(1) Elements of a Programme for Raising Income and Employment Levels in Italy over the Ten Years 1955-64 (Provisional Draft), January 1955.

2. Factors Affecting the Rate of Income Growth.

The official figures for the gross national product at market prices in each of the years 1950 to 1955 are shown in Table 1 (2). It is estimated that over this period the gross product increased in real terms at an average annual rate of over 5 per cent. The rate of growth fluctuated considerably from year to year. The unevenness was, however, mostly due to the large proportion of the total national product which is accounted for by agriculture (see Table 2), and the consequent strong influence of harvest variations (3).

The upward movement in industrial output (excluding construction) taken by itself proceeded, according to the official index, at an average annual rate of some 10 per cent; and the movement (corrected for normal seasonal variations) was uninterrupted by such temporary downturns as were experienced in a number of other countries. Concerning this measure of industrial expansion, however, it should be remarked that the official index is inevitably based on data relating to a limited part of total industrial activity. It relates essentially to the activities which are carried on in medium- and large-scale units of production, and is not necessarily representative of the movement in those sectors — forming

(2) An analysis by industry divisions of the gross product (at factor cost) of the private sector follows in Tables 2 and 3.

(3) The real percentage rates of growth from one year to the next, calculated by valuing 1951 income at 1950 prices, 1952 income at 1951 prices, and so on, were estimated as follows: 1950-51 6.0; 1951-52 3.0; 1952-53 7.0; 1953-54 4.6; 1954-55 7.2. (Cf. *Relazione generale sulla situazione economica del Paese*, 1954 and 1955).

GROSS NATIONAL PRODUCT AND EXPENDITURE AT MARKET PRICES
(Milliards of lire)

TABLE 1

	1950	1951	1952	1953	1954	1955
1. Total consumption expenditure	6,817	7,799	8,509	9,149	9,576	10,213
2. Gross capital formation	1,643	2,058	2,110	2,284	2,489	2,925
3. Total domestic expenditure	8,460	9,857	10,619	11,433	12,065	13,138
4. Exports of goods and services, and income received from abroad (1)	963	1,279	1,160	1,337	1,433	1,620
5. *Less* Imports of goods and services, and income paid abroad (1)	1,033	1,437	1,569	1,677	1,678	1,856
6. Gross national expenditure (=gross national product)	8,390	9,699	10,210	11,093	11,820	12,902
7. Deficit in balance of payments (2) (=5−4)	70	158	409	340	245	236
8. Total resources available for internal use (=6+7) (=total domestic expenditure)	8,460	9,857	10,619	11,433	12,065	13,138
9. Ratio of gross investment to gross national product (per cent)	19.6	21.2	20.7	20.6	21.1	22.7
10. Ratio of gross investment to total resources (per cent)	19.4	20.9	19.9	20.0	20.6	22.3
11. Ratio of item 7 to item 6 (per cent)	.8	1.6	4.0	3.1	2.1	1.8

(1) Includes income on investments, and remittances of temporary emigrants. Does not include gifts, either governmental or private.

(2) Defined in accordance with the description of items 4 and 5.

Calculated in accordance with the OEEC scheme, the gross national product is higher (for the reason given in the footnote to Table 2 below). The resultant figures, with the corresponding investment ratios, are as follows:

Gross National Product at Market Prices, According to OEEC Scheme

	1950	1951	1952	1953	1954	1955
I. Gross national product	8,618	10,009	10,633	11,616	12,409	13,529
II. Total resources available for internal use	8,688	10,167	11,042	11,956	12,654	13,765
III. Investment	1,643	2,058	2,110	2,284	2,489	2,925
Ratio III÷I (per cent)	19.1	20.6	19.8	19.7	20.1	21.6
Ratio III÷II (per cent)	18.9	20.2	19.1	19.1	19.7	21.2

a large part of the total industrial economy — which are predominantly the province of very small firms (4). Indeed, the presence in the Italian economy of a large number of tiny producing units and — what is partly a result of this — the lack of comprehensive fiscal data on incomes, inevitably makes the possible margin of error in Italian national income statistics as a whole a good deal larger than it is likely to be in some other Western countries.

It has been commented in the « Vanoni Plan » that an average rate of growth of 5 per cent in the gross national product is a high one. The rate appears high both in relation to earlier Italian experience, and — even allowing for the difficulties of making precise international comparisons — in relation to the rates registered over the last six years in other Western countries, with the exception

(4) Cf. p. 169 below.

GROSS PRODUCT OF PRIVATE SECTOR AT FACTOR COST BY INDUSTRY OF ORIGIN TABLE 2
(Milliards of lire)

	1950	1951	1952	1953	1954	1955
1. Agriculture, forestry and fishing	2,234	2,332	2,352	2,678	2,666	2,801
2. Mining	58	97	112	116	132	167
3. Manufacturing	2,438	3,130	3,139	3,335	3,536	3,839
4. Building	234	289	404	531	628	738
5. Electricity, gas and water	180	205	231	255	274	291
6. Transport and communication	479	534	596	643	713	799
7. Distributive trades and miscellaneous services	1,302	1,419	1,558	1,340	1,443	1,546
8. Insurance, banking and finance				321	351	391
9. Ownership of buildings	76	118	148	160	175	201
10. Total	7,001	8,124	8,540	9,379	9,918	10,773
11. Adjustments	427	515	656	779	872	952
(a) for duplications within the private sector	199	205	233	256	283	325
(b) for « intermediate » services rendered by the public authorities to the private sector (1)	228	310	423	523	589	627
12. Adjusted total gross product	6,574	7,609	7,884	8,600	9,046	9,821

(1) By contrast with the schemes used by some other countries and also with that proposed by the OEEC, the Italian national income statistics treat only part of the services rendered by the public authorities as « final ». They distinguish, that is to say, between the services which are « final » in the sense that they directly benefit the citizens, and the services that are « intermediate » in the sense that they benefit, or are used by the various productive sectors. The second group figures among the deductions that have to be made from the value of total output of the private sector in order to obtain the « value added » of that sector.

of Western Germany. And, in the case of the latter, the exceptionally high rate achieved was partly a reflection of the absorption, into the productive system, of additional workers on a scale which is unfortunately far from having been reached in Italy.

The « Plan » drew attention to a number of special factors — of a non-recurrent nature — from which the Italian economy had benefited over the preceding five years, and which help to explain the high rate of income growth. First, both industry and agriculture were catching up with a backlog of technical improvements of which the adoption had been delayed by the war and by the early post-war difficulties; and they were thus able to achieve rates of increase in productivity that were above normal.

Secondly, substantial margins of excess capacity existed in certain lines at the beginning of the period, and part of the subsequent expansion of output came about through the gradual bringing into use of these reserves of plant and equipment.

A third factor was the impact effect of the liberalisation of imports — begun in 1949 and intensified in the two following years — which gave Italian industry access to sources of supply of certain goods (especially of machinery and equipment) from which it had previously been cut off by quantitative restrictions.

All of these factors had the effect of allowing output to expand more than would normally be possible on the basis of a given level of capital formation. All of them are by now more or less fully integrated into the economic system, and cannot be expected to exert the same effect on the future rate of income growth as they did on the past rate.

At least one other factor should be kept in mind as likely to help keep the future statistical rate of income growth in Italy high. It concerns the effect on the national income

TABLE 3

GROSS PRODUCT AT FACTOR COST OF MANUFACTURING INDUSTRIES
(Milliards of lire)

	1953	1954	1955
1. Food, drink and tobacco	632	659	690
2. Textiles	383	389	359
3. Clothing, furnishings, leather, etc.	137	146	134
4. Wood	172	167	177
5. Paper	53	55	62
6. Rubber	55	59	59
7. Metal manufacture	246	276	350
8. Engineering	857	896	979
9. Processing of non-metalliferous minerals	141	150	177
10. Chemicals and allied trades	470	542	636
11. Printing, gramophones, films, and cinematographic, and miscellaneous	189	197	216
12. Total	3,335	3,536	3,839

statistics of the possible decline in the importance of « auto-consumption » in the agricultural sector.

Agricultural output which is consumed by the producers themselves is counted in the gross national product at its value at the farm rather than — as has sometimes been recommended by experts in national income accounting — at the retail price for which it would sell in, say, the nearest market centre. A rough estimate indicates that « auto-consumption » still represented in 1955 close on 30 per cent of total saleable agricultural output in Italy. It will become a declining proportion as workers now engaged in agriculture move away to other sectors (industrial or tertiary). An this shift will lead to an expansion of tertiary activities (transport, and the distributive trades) which represents a « fictitious » element in income growth, in the sense that it causes the national product

PRICE INDICES, ANNUAL AVERAGES
(1938=1)

TABLE 4

	1950	1951	1952	1953	1954	1955	Increase 1950-1955 (per cent)
I. Wholesale prices:							
1. General index (ISTAT)	49.0	55.8	52.7	52.5	52.9	53.2	8.5
2. Food products (ISTAT)	52.3	55.2	54.0	56.7	57.7	58.6	12.0
3. (a) Industrial materials and products (1) (2)	49.4	62.3	56.0	51.4	50.9	50.9	3.0
(b) Industrial materials (3)	55.4	72.5	69.0	60.5	57.2	59.7	7.8
(c) Industrial products (3) (finished and semifinished)	47.8	59.7	52.8	49.2	49.2	48.7	1.9
4. Consumers' goods (1)	51.6	59.6	54.4	55.3	56.0	56.0	8.5
5. Producers' goods (1)							
(a) Investment goods (4)	54.7	68.1	70.3	62.4	60.0	63.7	16.4
(b) Goods for immediate use (5)	40.5	49.1	48.0	44.5	45.0	46.4	14.6
II. Cost of living (ISTAT):							
1. General index	48.5	53.3	55.5	56.5	58.1	59.7	23.1
2. Food	58.8	62.8	65.4	66.8	68.7	70.6	20.1
3. Rent	7.3	12.3	15.6	17.2	18.3	20.9	186.3
III. *Ratio of wholesale food prices to industrial prices 1.2.÷1.3.* (a)	*1.06*	*0.89*	*0.96*	*1.10*	*1.13*	*1.15*	
IV. *Ratio of cost of living (food) to wholesale food prices*	*1.12*	*1.14*	*1.21*	*1.18*	*1.19*	*1.20*	

(1) Elaboration by Bank of Italy of ISTAT wholesale price indices.
(2) All commodities from general index except food products, both raw and processed.
(3) Sub-group of (a).
(4) Metallurgical and engineering products, bricks, cement and other constructional materials.
(5) Chemical materials and products, rubber and fuel.

to be inflated by the costs of marketing produce which previously required no marketing.

Even if the extent to which this factor helped swell the rate of growth in the Italian national product over the past few years was small, it might become more substantial in the future if — in accordance with the aims of the « Vanoni Plan » itself (5) — opportunities for employment in non-agricultural activities were to expand sufficiently to draw large numbers of the « under-employed » off the farms. And it would be one reason for expecting the national income figures to continue showing a relatively high rate of growth, and a reason for supposing that the *statistical* rate might have to be somewhat higher than the 5 per cent assumed by the « Vanoni Plan » in order for the desired *real* rate to be achieved.

3. The Pattern of Investment.

The presumption that it will be possible to prolong the average « real » rate of income growth of 5 per cent per annum over the future occupies a key position in the « Vanoni Plan ». And a primary concern of the Plan is that of securing a future investment level sufficient to achieve this aim, on the presumption that, with the exhaustion of the special factors referred to above, the level required would have to be higher than in the past (6). Our purpose here is not to discuss whether the required *aggregate* volume of investment can in fact be reached, but to call attention — with illustrations from the experience of the recent past — to factors which may influence the *pattern* of investment, and particularly of industrial investment, and which therefore help to determine the employment effects of any given aggregate volume.

The statistics (Table 1) for the five years 1950 to 1955 show gross capital formation as having represented from 20 to 23 per cent of the gross national product (7) or from 19 to 22 per cent of the total resources available for internal use inclusive of the contribution made by the deficit in the balance of payments (8).

Between 1950 and 1955 gross *fixed* capital formation, taken alone, rose in money terms by close on 80 per cent. The increase in real terms was perhaps of the order of 55 per cent (9), equivalent to an average annual rate of growth of about 10 per cent.

One of the questions to which it would be important to be able to give an answer is why this comparatively high rate of investment did not so far succeed in making much of a dent in the unemployment problem.

The effect which the increase in total fixed capital formation could be expected to have in creating permanent additions to employment and income naturally depends on the qualitative composition of the total. A good part (see Table 5) did in fact take the form of housing (partly state-aided), public works and land reclamation projects, which either have no direct effect in increasing the productive capacity of the economy or else begin to show significant effects only in the much longer run. In 1955 housing investment alone accounted for about 26 per cent of gross fixed investment, and housing plus public works (10) for 35 per cent. The proportion taken by these two categories in 1955 was thus substantially above the comparable figure (27 per cent) for 1950. By contrast, industry,

(5) The « Plan » envisages an exodus from agriculture, within the decade 1955-64, of up to 900,000 workers (at present unemployed or « under-employed »).

(6) The ratio of gross investment to total resources available would, the « Plan » assumes, rise to 25 per cent by 1964.

(7) These proportions again appear high in comparison with the figures, in the neighbourhood of 15 per cent, found in most Western countries, even though they fall considerably below the levels reached in Western Germany.

(8) The contribution from this source (equivalent, insofar as it was not covered by foreign grants, to dissaving in the form of drawings on foreign assets or of additions to foreign indebtedness) was particularly important in 1952 and 1953 when it reached 4 and 3 per cent respectively of the gross national product (see Table 1).

(9) The price-level of « investment goods » rose (see Table 4) by an estimated 16 per cent.

(10) Some of these public works expenditures are probably to be considered as more in the nature of unemployment assistance than of investment in any strict sense.

which had absorbed from 37 to 38 per cent of the total in each of the three years 1950-1952, took only 33 per cent in 1953, and 31 per cent in each of the two years 1954 and 1955.

TABLE 5

GROSS CAPITAL FORMATION
AT MARKET PRICES BY SECTOR
(Milliards of lire)

	1950	1951	1952	1953	1954	1955
1. Agriculture . . .	180	265	270	310	337	370
2. Industry	570	700	780	740	750	846
3. Transport and communication . . .	270	270	310	358	414	422
4. Housing	280	320	409	466	579	701
5. Public works (1) .	130	165	231	260	242	250
6. Other	90	115	120	120	132	146
7. Total fixed capital formation	1,520	1,835	2,120	2,254	2,454	2,735
8. Movement in stocks	+123	+223	− 10	+ 30	+ 35	+190
9. Total gross capital formation	1,643	2,058	2,110	2,284	2,489	2,925

(1) Excludes that part of public construction work which relates to the other sectors indicated, such as work carried out on land reclamation and improvement (which is entered under « agriculture »), work relating to the permanent way of railways (which is included under « transport »), and housing built by, or with financial aid from the public authorities (which is included under « housing »).

Source: Research Division of the Bank of Italy.

Even though the proportion of total gross investment taken by industry declined between the beginning and the end of the period, the absolute expansion in gross industrial capital formation was considerable. As near as we can tell, the growth in real terms between 1950 and 1955 must have been not far short of 30 per cent.

In order to explain why the employment effects were so small, we should need to make a further qualitative distinction within the investment total. In an economy where the level of employment is — for structural reasons — far short of full, the growth in productive capacity may be more or less concentrated in either of two directions, corresponding to two alternative types of development process:

(a) It may provide the additional plant and equipment required to absorb into productive employment the unemployed along with the current increment in the labour force; i.e. it may serve to broaden the employment base.

(b) It may provide the already employed workers with on the average more, or more elaborate equipment; i.e. it may serve to increase the « capital-depth » of a constant (or even declining) employment base.

This second process may in turn manifest itself in two different ways. It may take the form of the installation of increasingly elaborate equipment, in the existing plants. And/or it may take the form of a growth in the relative weight, within the total complex of industrial activities, of the more capital-intensive as opposed to the less capital-intensive sectors.

The available statistical material on industrial capital formation is too limited to allow any direct estimates to be made of the quantitative importance, in recent years, of these different forms of investment. The official data are at present confined to the annual totals for industry as a whole, no attempt being made to divide them up between individual industries or industry groups. It is thus impossible to estimate how the investment totals were distributed between the more capital-intensive and the less capital-intensive industries respectively. And, although a certain amount of fragmentary information drawn from company reports and other sources indicates that, in individual instances, a large part of the investment of the period under review went into modernising and re-equipping existing plants rather than into establishing or equipping new plants or plant extensions, no comprehensive statistical measure of the relevant proportions is at present available.

Direct evidence, in the form of actual investment figures, showing which type of investment process — the « deepening » or the « broadening » type — predominated

during the period under review is thus lacking. Indirect evidence must therefore be sought in the employment and output statistics.

4. Changes in the Employment Level.

Under present conditions in Italy almost any statistical measurement of the volume of unemployment contains an element of arbitrariness, owing to the difficulty of drawing a clear demarcation line between unemployment and « under-employment », or between those above the « poverty-line » and those below. One reason for this is that in a country where family allegiances are strong, and the small, family-business is still preponderant in large sectors of the economy, the total volume of « unemployment » tends to get spread over large numbers of persons. The movements up and down in the figures of the number of persons registered as unemployed at the Labour Exchanges are, for this reason alone, an unreliable guide to the deterioration or improvement of employment conditions.

These figures are, moreover, vitiated by errors of both under- and over-registration. On the one hand, they inevitably omit large numbers of unemployed who fail, for various reasons, to register. On the other hand, the technical impossibility of keeping a continuous check over the genuineness of the registrations means that some of them are likely to be « illegal », i.e. to be made by employed persons who seek to share in benefits which are allocated from time to time to the unemployed. For these and similar reasons, weekly or monthly fluctuations in the figures for registered unemployment have small significance.

The annual averages of the monthly figures show an upward, rather than a downward trend over the five years (see Table 6). Even this fact, however, as has already been observed in the « Vanoni Plan », does not necessarily signify that the growth in employment — defined in a very broad sense — failed even to keep pace with the natural increment in the labour force net of emigration. It may merely mean that, increasing numbers of the « under-employed » in agriculture, in the small handicraft industries and in commerce, were actively seeking full-time employment and more adequate levels of earnings.

TABLE 6

UNEMPLOYED REGISTERING AT LABOUR EXCHANGES (1)

(Thousands)

	Class I (2)	Class II (3)	Class III (4)	Total (I + II + III)	Class IV (5)	Class V (6)
1950	1,190.1	424.8	156.1	1,771.0	31.5	57.6
1951	1,212.4	508.7	135.7	1,856.8	30.9	50.6
1952	1,260.9	588.8	132.4	1,982.1	39.4	51.9
1953	1,282.0	664.6	133.1	2,079.6	47.8	53.8
1954	1,304.8	653.9	136.6	2,095.3	54.9	47.1
1955	1,303.3	610.1	138.4	2,051.8	59.7	49.5

(1) Annual averages of end-of-month data.
(2) Formerly employed persons.
(3) Young persons below age of 21 and others in search of first job or released from armed forces.
(4) Women engaged in domestic duties in the home and in search of first job.
(5) Pensioners in search of work.
(6) Employed persons seeking change of job.

Source: *Relazione generale sulla situazione economica del Paese* (Annual).

Note: In this, and subsequents tables discrepancies between totals and the sums of constituent items are due to rounding.

On the other hand, as will emerge more clarly from what follows, there is no sure indication that, over industry and commerce as a whole, the volume of « under-employment », or the number of people working at average rates of productivity and real income which are below the « poverty-line », actually decreased over the period.

For a significant measure of the extent to which the Italian economy moved closer to, or further away from a situation of « full employment », we should need, for the reasons given, to look at the employment, rather than the unemployment figures, and — more exactly — to look at the figures for those employed at levels of earnings above a certain

minimum, rather than at the figures for employment in the broadest sense of all those engaged in « gainful » activity no matter what the level of remuneration. Only fragmentary information is available, however, even concerning the movement in employment in this broad sense.

The only continuous series of employment figures obtained by direct investigation, and doubtless the most accurate series for the area — admittedly a limited one — which they cover, are the industrial employment figures collected at monthly intervals by the Ministry of Labour.

The Ministry's sample has long been suspected of being unrepresentative not only of the absolute level of aggregate industrial employment, but even of its percentage movement. The reasons for this are several: First, the sample omits many sectors of manufacturing industry, as well as construction, gas and water. Secondly, it does not register employment of those outside the category of « workers ». Thirdly, it takes no account of establishments employing less than 10 workers, thus almost automatically excluding the large zone of Italian industry which is predominantly in the hands of very small units (11) frequently of the artisan type. Even the percentage growth in industrial employment might thus be underestimated by these figures in certain circumstances, e.g. if the industries not covered had expanded more rapidly than those covered; or if the number of employees in the self-employed, and supervisory and clerical categories had risen more than in proportion to the number of « workers » (12); or, finally, if the very small establishments had been growing in numbers and in employment faster than the larger ones (13).

(11) Cf. Table 8 below.

(12) This might happen either within individual sectors or, over industry as a whole, by virtue of a change in the relative weight of sectors with different proportions.

(13) An increase, within an establishment, of the number of workers from 9 to 10 (or a decrease from 10 to 9) may, of course, cause some exaggeration in the movement of employment by pushing the whole establishment within (or without) the employment figures.

It seems opportune to analyse in some detail the nature, and extent of the zone of industry which the Ministry of Labour does cover, and for which the data may probably be regarded as giving a reasonably close approximation, at least to the *percentage movement* in employment from year to year. This may be done by making a sector-wise comparison between the Ministry's figures for the month of November 1951 and the presumably more or less complete data registered by the Industrial and Commercial Census for approximately the same date (5th November, 1951).

The Census also provides the only fairly complete instantaneous picture recently taken of employment in non-agricultural activities exclusive of the public administration, the armed forces and the professions. The employment registered in the various branches of activity covered (i.e. industry, transport, commerce, finance and services) is shown in Table 7. Employment in all these branches combined totalled 6.8 millions. This figure is probably on the low side, for at least two reasons: First, in the month of November, employment is seasonally low in the important sector of construction, as well as in some sectors of the food industry, so that the Census figures may fall short of those reached, in the same year, at dates of maximum, or average activity. Secondly, the figure for employment in construction seems to be very low, even for the month of November, and must probably be regarded as having failed to register a good part of the construction work carried on in « labour and reafforestation camps » (14).

In industry taken by itself, the Census figures for employment *in all grades* (managerial staff, self-employed and family associates, supervisory and clerical staff, and workers including apprentices) reached a total of 4.2 millions. The Ministry of Labour figures for the month of November 1951 registered employment of *workers* totalling

(14) Cf. *Informazioni SVIMEZ*, May 23, 1956, p. 455.

1.7 million. They thus appear to have covered at that date just over 40 per cent of the total industrial employment *in all grades* as registered by the Census. Related to the Census figure for employment of *workers* (including apprentices) taken alone the coverage by the Ministry was of course higher — about 57 per cent (15).

TABLE 7

INDUSTRIAL AND COMMERCIAL EMPLOYMENT
NOVEMBER 1951
(Thousands of persons employed)

1. Industry	4,241.9
2. Transport and communication	579.3
3. Commerce (1)	1,589.6
4. Insurance, banking and finance	162.4
5. Miscellaneous activities and services (2)	208.0
6. Total	6,781.1

(1) Includes wholesale and retail trade; hotels and restaurants and analogous establishments; and auxiliary commercial activities. Wholesale and retail trade together accounted for 1,202.0.

(2) Includes: entertainments and analogous activities; services relating to personal care; cleaning services; health services provided by Public Administration and by various social institutions (*e. g.* hospitals, pharmacies, etc.).

Source: *III Censimento generale dell'industria e del commercio*, 5th November 1951.

The unit adopted as the basis of classification of activities is here the « local unit », and not the firm. Where a unit exercises more than one activity, it is treated as belonging to that branch of activity which is the predominant one. The same holds true for the sector divisions used in the tables that follow.

In Table 8 are shown the two sets of industrial employment figures classified by sector. An analysis of the two sets has suggested a division of the various sectors into two groups.

Group I, taken as a whole, may be regarded as constituting the zone of Italian industry which — at the Census date — was well covered by the Ministry of Labour. For each sector within this zone, the Ministry's figures (for workers) represented a high percentage not merely of the Census figure for workers only, but also of the Census figure for employees of all grades. Group II, by contrast, represents the zone of industry over which the coverage by the Ministry of Labour was low, both for the zone as a whole and for each sector within it.

Any such grouping contains, of course, an element of arbitrariness concerning where the line is to be drawn, and as to how finely broad industrial sectors should be divided into narrower sub-sectors. We have introduced one such sub-division. We have, that is to say, divided up the Census figures for « engineering » so as to exclude from Group I the whole of the category classified as *officine*, on the grounds that these consist of odd-job, and repair shops lying entirely outside the part of engineering covered by the Ministry of Labour, and falling more appropriately under Group II. In some cases, also, the individual sector divisions are only approximately co-extensive as between the two sets of data, owing to discrepancies in the system of industry classification (16).

The difference between the ratios shown by the two groups is, however, sharp enough to make the division chosen appear a significant one. And the inexactitude due to the lack of perfect homogeneity of the sub-groups as between the two sets of data, though not negligible, is probably small (17).

Within Group I, the ratio of the Ministry of Labour figure *for workers* to the Census figure *for all employees* in the individual sectors ranges from a minimum of 40 to a

(15) This ratio may be too high if the Census figure for industrial employment in some sectors (especially construction) is recognised, for the reasons given, as being too low. A very small additional exaggeration is caused by the exclusion from the Census figures of « repair shops » belonging to the railways (see footnote 17 below).

(16) One such difficulty — within Group I — relates to the classification of the item « artificial and synthetic textile fibres ». The production (chemical stage) of these is treated as part of the chemical industry by the Census, and as part of the textile industry by the Ministry.

(17) In one case — that of « engineering I » — the lack of homogeneity in the method of classification cuts across the division between « industry » and « transport ». Repair shops for railway equipment are listed by the Ministry under « industry » (in the sub-sector « vehicles ») while those belonging to the railways are listed by the Census under « transport ». The effect of this discrepancy is slightly to overstate the true ratio of the Ministry's figures to the Census figures in « Group I - engineering » and, to a smaller extent, in Group I as a whole.

TABLE 8

INDUSTRIAL EMPLOYMENT: CENSUS AND MINISTRY OF LABOUR FIGURES, NOVEMBER 1951

	Census		Ministry of Labour			Census		
	I Employees	II Workers (1)	III Workers	Ratio III/II (per cent)	Ratio III/I (per cent)	Per cent of employees working in small units (2)	Per cent of employees (3) working in artisan units	Ratio of «workers» to employees (per cent)
	(Thousands)							
GROUP I								
A. Mining	118.7	101.6	60.4	59.4	50.9	15.8	Nil	85.6
B. *Manufacturing*:								
1. Textiles	650.9	571.7	529.6	(b)	(b)	8.7	6.4	87.8
2. Paper (and paper-working)	63.4	55.4	37.0	66.8	58.3	8.2	3.0	87.2
3. Printing and publishing	74.5	51.4	35.1	68.3	47.1	26.8	12.8	69.0
4. Leather (and skins)	38.6	26.9	15.3	56.9	39.6	34.1	24.9	69.7
5. Rubber	40.1	32.4	32.0	98.8	79.8	8.6	5.9	80.8
6. Chemicals	148.7	111.7	110.7	(b)	(b)	10.5	3.7	75.1
7. Petroleum and coal derivates	18.7	12.8				3.9	0.7	68.4
8. Cellulose and artificial and synthetic fibres for textiles	32.4	29.4	(a)			Nil	Nil	91.0
9. Non-metalliferous minerals	206.7	168.7	105.5	62.5	51.0	20.2	10.7	81.6
10. Metallurgical	145.1	128.2	100.6	78.5	69.3	1.1	0.4	88.4
11. Engineering I (4)	669.8	552.0	516.5	93.6 (84.8)	77.1 (75.9)	7.7	3.0	82.4
Total B (4)	2,088.9	1,740.5	1,482.3	85.2 (82.4)	71.0 (70.5)	9.0	5.4	83.3
C. Electricity	67.1	44.2	34.9	79.0	52.0	18.9	Nil	65.9
TOTAL GROUP I (4)	2,274.6	1,886.4	1,577.6	83.5 (81.1)	69.4 (68.9)	9.6	5.0	82.9
GROUP II								
B. *Manufacturing*:								
1. Food and allied	360.1	209.5	84.2	40.2	23.4	51.3	22.3	58.2
2. Tobacco	52.5	48.8	—	—	—	21.3	Nil	92.9
3. Clothing and furnishings	411.5	142.4	36.3	25.5	8.8	76.1	73.8	34.6
4. Wood, furniture, etc.	293.6	128.4	21.7	16.9	7.4	69.3	56.1	43.7
5. Engineering II	227.1	78.3	—	—	—	80.7	69.3	34.5
6. Photo-phono-cinematographic	11.1	2.5	1.5	60.0	13.5	81.2	67.0	22.5
7. Miscellaneous manufactures	53.6	43.3	—	—	—	18.2	9.7	80.8
Total B	1,409.4	653.1	143.8	22.0	10.2	64.3	51.2	46.3
C. Water	11.8	7.6	—	—	—	48.0	Nil	64.4
Gas	14.1	9.9	—	—	—	3.4	Nil	70.2
D. Construction	532.1	457.8	—	—	—	18.0	5.8	86.0
TOTAL GROUP II	1,967.3	1,128.5	143.8	12.7	7.3	51.6	38.1	57.4
TOTAL GROUP II (excl. construction)	1,435.2	670.7	143.8	21.4	10.0	63.6	50.1	46.7
Total Groups I and II (4)	4,241.9	3,014.9	1,721.4	57.1 (56.5)	40.6 (40.2)	28.1	20.4	71.1
Total Groups I and II (excl. construction) (4)	3,709.8	2,557.0	1,721.4	67.3 (66.2)	46.4 (46.0)	29.5	22.4	68.9
Total manufacturing industries only (4)	3,498.2	2,393.6	1,626.1	67.9 (66.9)	46.5 (46.0)	30.1	23.8	68.4

(1) Includes: *operai e manovali*; *sorveglianti, custodi, addetti ai servizi interni*; *apprendisti*.

(2) Represents ratio of employees working in «operating» establishments with 10 or fewer employees to total of all employees in «operating» establishments. The denominator, since it excludes «administrative» establishments, is not identical with the figure of Column I.

(3) The total number of employees is here taken inclusive of those in «administrative» establishments, *i.e.* is identical with the figure given in Column I.

(4) The entire item «railway and tramway rolling stock» in the Census returns accounted for 27.9 thousand employees, of whom 23.0 thousand were «workers». And the entire item «railway equipment construction and repair shops» in the Ministry of Labour figures accounted for 29.0 thousand workers. The exclusion of the whole item in each case from «engineering I» brings the affected ratios down to the figures shown in brackets.

(a) Cf. footnote 16 above.

(b) For «chemicals and allied trades» (6+7+8) and «textiles» taken together the percentages were 88.2 (for workers to all employees) and 75.3 (for workers to workers).

maximum of 80 per cent; and for the group as a whole the ratio is nearly 70 per cent. Within Group II, the individual sector ratios range from nil to 23 per cent. Construction (which in the Census data accounted for over half a million employees), since it is not covered at all by the Ministry, is of course a heavy item helping to make the average ratio low [7 per cent (18)] in Group II taken as a whole. Even if the comparison is confined to the manufacturing sectors alone, however, those included under Group I are together covered to the extent of some 70 per cent by the Ministry, whereas those in Group II are covered only to the extent of 10 per cent.

The relative size, in terms of total employment, of the two industrial groups — at the Census date — was nearly 2.3 millions for Group I, as against nearly 2.0 millions for Group II. *The grouping thus divided Italian industry roughly into two halves — in terms of employment.*

The primary criterion followed in grouping the sectors in the manner of Table 8 was that of determining what part, and how large a part of industry might be considered as fairly well covered — at the Census date — by the Ministry of Labour data on employment. Certain further characteristics on which the degree of coverage partly depends, and which are again derived from the Census figures, are shown in the last three columns of the same table. Broadly speaking the sectors in Group I show the following characteristics: First, a small proportion of total employees is attached to very small establishments (with ten or fewer employees). Secondly — what is in most cases partly the same thing — a small proportion of the total employees is attached to units of the artisan type. Thirdly, the proportion of workers to total employees in all grades is high. In Group II, on the other hand, it is generally true — though there are several important exceptions relating to some of the sectors [construction, tobacco, miscellaneous manufactures (19) and gas (20)] which the Ministry does not cover at all — that the proportion of total employees attached to very small establishments is high, and that the proportion attached to artisan units (21) is also high. And partly as a consequence of the latter feature, which implies a high proportion of persons in the self-employed and family associates category (22), the proportion of workers to total employees is — again with certain exceptions in the sectors not covered at all by the Ministry — relatively low.

The analysis of the two sets of figures makes it appear highly probable that the percentage movement in the Ministry of Labour's monthly data for employment of workers gives a fair approximation to that in total employment in the zone of industry which has been described as Group I, and which comprises most of the industries that are run predominantly on the basis of medium- and large-scale units. The Ministry's figures would be unlikely seriously to understate the actual percentage growth of employment in this zone, *unless*: (a) in the larger establishments the ratio of employees in the supervisory and clerical grades to those classified as «workers» had substantially increased; and/or (b) the proportion of very small, or artisan establishments had appreciably increased. Some movement of the first kind may quite well have taken place during the last few years, in consequence partly of the introduction of the most modern methods of factory organisation, increased mechanisation, etc. It is also possible that there was some movement of the second kind, due perhaps to the increased « putting out » of certain jobs by the larger

(18) Or still less if allowance is made for the fact that the figure for construction is too low.

(19) These comprise: electric wiring material; electric lighting equipment; musical instruments; articles made of plastics; other articles not elsewhere classified.

(20) « Gas » in the Census includes: (a) « production » as well as « distribution of coal gas »; and (b) « transport and distribution of natural gas by gas ducts ». The « production » of natural gas is classified under « mining ».

(21) Very few artisan units employed more than 10 persons according to the Census.

(22) Cf. Table 20 below.

complexes to units of the artisan type, where labour was cheaper. It seems improbable, however, that the relevant proportions can have changed so sharply as to make an appreciable difference to the percentage increase in employment in the first zone.

For the second zone — *accounting in 1951 for not far from half of total industrial employment*, and largely consisting of industries which are predominantly in the hands of artisan, and other very small producing units — the Ministry of Labour figures cannot be regarded as giving any reliable clue to the measure in which employment expanded.

ESTIMATES FROM VARIOUS SOURCES OF MOVEMENT IN EMPLOYMENT — TABLE 9

	1950	1951	1952	1953	1954	1955
I. *Ministry of Labour*:						
A. All industrial sectors covered:						
1. No. of workers ('000)	1,722.3	1,738.7	1,733.6	1,737.6	1,758.2	1,774.5
2. Index	*100*	*101.0*	*100.7*	*100.9*	*102.1*	*103.0*
B. Group I sectors						
1. No. of workers ('000)	1,571.9	1,587.2	1,579.6	1,580.6	1,594.1	1,600.5
2. Index	*100*	*101.0*	*100.5*	*100.5*	*101.4*	*101.8*
II. *INAIL* (1):						
A. Industry (excl. of construction):						
1. No. of workers ('000)	2,301.4	2,390.4	2,422.0	2,507.2	2,634.5	
2. Index	*100*	*103.9*	*105.2*	*108.9*	*114.5*	
B. Construction:						
1. No. of workers ('000)	506.5	524.1	605.1	692.7	743.4	
2. Index	*100*	*103.5*	*119.5*	*136.8*	*146.8*	
C. Transport (2)						
1. No. of workers ('000)	181.3	203.7	216.1	230.5	263.7	
2. Index	*100*	*112.4*	*119.2*	*127.1*	*145.4*	
D. Total A+B+C:						
1. No. of workers ('000)	2,989.2	3,118.2	3,243.2	3,430.3	3,641.6	
2. Index	*100*	*104.3*	*108.5*	*114.8*	*121.8*	
3. Variation ('000)		+ 129.0	+ 125.0	+ 187.1	+ 211.3	
III. *Relazione economica* (1955):						
Employment in all non-agricultural activities:						
Variation ('000)				+ 280	+ 300	+ 300
IV. *ISTAT sample investigation* (3):						
Employment in all activities:						
('000) (4)					17,353	18,299
Variation ('000)						+ 946

(1) Number of « man-years » insured.
(2) Excluded are groups (State Railways, merchant marine, post and telegraph) which are insured by bodies other than INAIL.
(3) The sample covered, in 1954, 64,335 families with 250,046 members, selected at random from 635 *comuni*, and in 1955, 68,861 families (largely the same as those of the previous year) with 263,486 members selected from 639 *comuni*. The sample was thus about 5 per mil. The enquiry was made on the 8th May in each year. *Source*: *ISTAT, Compendio Statistico Italiano*, 1956.
(4) Excluding those who did « occasional » work during the week in which the date of the enquiry fell.

The annual averages of the Ministry's monthly employment figures (see Table 9) show an increase — for Group I taken alone — of only 1.8 per cent in five years (23).

(23) The employment figure of 1,600 thousand registered by the Ministry for this Group in 1955 was, it may be noted, still below that (1,626 thousand) registered in 1948, when, however, industry still had on its payrolls excess personnel which in

The expansion of employment in this Group may thus have been sufficient to take up not many more than 40,000 (24).

Various attempts have been made to piece together information about the level and movement of employment over a wider area than that covered by the Ministry of Labour. The results of the main enquiries are also summarized in Table 9.

Among the three sets of figures shown following those of the Ministry, the first consists of indirect calculations based on the annual payroll figures reported to the INAIL (25) for purposes of accident insurance. The INAIL has converted these payroll figures, for the various industry groups and geographical regions, to « man-years » worked by dividing them by the average daily wage (26), resulting from the pay-slips of accident victims, multiplied by a conventional « working year » of 300 days. Methodological difficulties (27) make it doubtful in principle whether the INAIL employment estimates can come very near to the true movement.

Superficially at least the INAIL figure for total « man-years » worked in industry, exclusive of construction, in the year 1951 (2,390 thousand) comes very close to that for « workers » (2,557 thousand) given by the Census. Several considerations, however, warn against concluding that this near-coincidence was more than a chance phenomenon:

1) The category of employees subject to compulsory accident insurance is broader than that of « workers » in receipt of fixed contractual remuneration. It extends also to those (i.e. family associates and members of co-operatives) who, though « dependent » in the sense of being subject to the orders of the employer (e.g. artisan or co-operative), are not remunerated on a fixed contractual basis.

2) On the other hand the INAIL data automatically exclude an undetermined number of workers, family associates, and « co-operators », employed on tasks not classified as subject to accident risk, and therefore not coming under the compulsory insurance regulations.

3) The INAIL figures also exclude workers (e.g. porters, and groups employed under sub-contracting systems, as in the sulphur mines) whose remuneration could not be ascertained directly from the employer but had to be set at « conventional rates » calculated indirectly (28).

4) The definition of « industrial activity » adopted for purposes of accident insurance is broader than that used by the Census: Under the food industries group it includes, so long as they are associated with the use of mechanical appliances, activities (stock-raising, forestry, processing of produce, and other work on the farm), which the Census regards as belonging to « agriculture ».

A comparative analysis of the INAIL figures for 1951 and the Census data for November of that year is given in Table 10. When the totals are divided between the two

some sectors was a legacy of war production, and in others had been hired for political reasons during the period of occupation, and which in view of the difficulty of making dismissals could be worked off only gradually in the following years.

(24) This estimate rests on the assumption that the ratio of « workers » registered by the Ministry of Labour to total employment, in Group I, was the same in both years as at the Census date (see Table 8).

(25) *Istituto Nazionale per l'Assicurazione contro gli Infortuni sul Lavoro.*

(26) The average daily wage received by the accident victim during the preceding fifteen days is reported when benefits are claimed. In common with the total payroll figures, it includes over-time pay and a *pro-rata* allowance for occasional or annual gratuities, but excludes family allowances.

(27) The method of calculating the number of « man-years » has been described by the INAIL itself (see its *Notizie statistiche 1950, 1951*, p. 28) as containing a systematic bias in two directions: In the first place it tends to give an employment figure which is *below* the true one because, in any given industry, accident frequency is higher among the older, and hence higher-paid workers than among the younger ones, so that the average wage calculated is higher than the true figure and the employment figure correspondingly lower. On the other hand, within the same age-group in any given industry, the higher paid workers are often those in higher positions (more specialised workers, superintendents, foremen, etc.) among whom the risk of accident is smaller. The INAIL (*ibid.*) regarded the first bias as being only partly offset by the second.

(28) It was guessed (cf. INAIL, *Notizie statistiche 1950, 1951*, p. 29) that 170,000 or 180,000 workers in industry *together with transport* might fall within this category.

main geographical regions — the North and the Mezzogiorno — it appears that for the North the INAIL figures for employment in industry, exclusive of construction and of the food and tobacco sectors, represented an almost 90 per cent coverage of the Census figure for workers, family associates, etc. in the same group of industries. This coverage is suspiciously high, especially in view of the probability that, even in the North:

(a) some workers were not legally liable to accident insurance; and

(b) there was some evasion with respect to those that were.

figures for the much narrower industrial zone which they cover. The 8-group industrial classification adopted by INAIL cuts across the sector divisions used by the Ministry, and across our division between Groups I and II. It is thus impossible to compare the two sets of data for the whole group of sectors (Group I) for which it was concluded earlier that the Ministry figures ought to be fairly representative. Two of the eight INAIL groups, one comprising chemicals, paper, printing, leather, and rubber, and the other mining, mineral processing (29), ceramics and glass, should, however, be closely comparable with sub-groups of Group I. For these two

CENSUS AND INAIL DATA: INDUSTRIAL EMPLOYMENT (Exclusive of that in Construction), 1951 (Thousands) — TABLE 10

	Census Figures of Categories of Employees Liable to Insurance (1)			IV Census Figure for all Employees	V INAIL Figures (4)	Ratio (per cent)	
	I Workers (2)	II Family Associates, etc., (3)	III Total I+II			V/III	V/IV
A. All groups:							
North	2,241.9	131.5	2,373.4	3,087.6	2,136.2	90.0	69.2
Mezzogiorno	315.1	64.4	379.5	622.2	254.2	67.0	40.9
Italy	2,557.0	195.9	2,752.9	3,709.8	2,390.4	86.8	64.4
B. All groups except « food and allied » (5):							
North	2,081.7	108.3	2,190.0	2,839.0	1,946.9	88.9	68.6
Mezzogiorno	217.0	44.4	261.4	458.2	190.3	72.8	41.5
Italy	2,298.7	152.7	2,451.4	3,297.2	2,137.3	87.2	64.8

(1) Except when working in jobs not considered as subject to accident risk: the number of persons in this class is not determinable.
(2) Including *sorveglianti*, etc., and *apprendisti*.
(3) Includes « co-operators ».
(4) Excludes an undetermined number of workers whose wages are calculated « indirectly ».
(5) Excluded are « food and allied » plus « tobacco » in the Census figures, and the group « food, forestry, stock-raising and agrarian industries, etc. » in the INAIL figures.

The growth, between 1950 and 1954, in total industrial employment (outside of construction) given by the INAIL figures was 14 per cent. This partly reflects an increase in hours worked per man. It compares with a rise of only 5 per cent (again including the increase in hours) in the Ministry of Labour's

important groups, the INAIL figures showed increases of 13.4 and 26.2 per cent respectively as against 10.0 and 13.9 per cent (including the effect of the longer hours) given by the

(29) Includes metallurgy in the narrow sense of the treatment of the minerals to extract the metal.

Ministry figures for approximately the same sector groupings. The discrepancy is large. It is difficult to believe, on the other hand, that *for these sectors* the method of indirect calculation used by the INAIL would give results nearer the truth than the method of direct enquiry used by the Ministry of Labour. Probably, it must be concluded that, over the past years at least, the INAIL data were strongly affected by the reduction in evasion of the compulsory insurance regulations.

The third set of figures shown in Table 9 are the estimates — admitted to be extremely rough — given by the *Relazione economica* (30) for the annual increases in total employment in *all non-agricultural activities*. For the three years 1953-1955 the annual increase has been put at between 280,000 and 300,000.

The final set of figures — which are included for completeness of the record — are those obtained from the sample investigations of employment in *all* activities, including agriculture, made by the ISTAT in May 1954 and May 1955. The result — an increase in employment in one year of 946,000 — is so violently out of harmony with the picture obtained from other statistical sources as well as from general impressionistic evidence that we must evidently dismiss these figures altogether. The sampling methods were probably inadequate to give results even approximately representative of the highly variegated Italian situation.

It is thus impossible to establish with any approach to certainty how great the increase in employment was during the period, or where the bulk of it went. An indirect, and extremely rough calculation gives some idea, however, of the order of magnitude of the number of persons who must have found employment somewhere. A tentative estimate of the growth between 1950 and 1955 in the population of working-age puts it at some 1,200,000 (see Table 11). Allowing for the increased proportion of women who were evidently seeking gainful employment, the ratio of the increment in the labour force employed or seeking employment to that in

TABLE 11

NATURAL POPULATION INCREASE, EMIGRATION, AND INCREASE IN POPULATION OF WORKING-AGE (a)
(Thousands)

	1950	1951	1952	1953	1954	1955 (b)
1. Natural increase in population	457	379	369	366	429	422
2. Net emigration	126	92	134	147	181	239
3. Increase in population net of emigration (1-2)	331	287	235	219	248	183
4. Natural increase in population of working-age (c)	*320*	*342*	*371*	*379*	*380*	*330*
5. Net emigration in working-age groups (c)	*95*	*69*	*100*	*110*	*140*	*180*
6. Natural increase in population of working-age less emigrants of working-age (4-5)	*225*	*273*	*271*	*269*	*240*	*150*
7. Population present (at end of year)	46,921	47,208 (d)	47,442	47,661	47,909	48,092

(a) Between 14th and 65th birthdays.
(b) Provisional.
(c) Estimates very rough.
(d) The population present at the Census date (4th November, 1951) was 47,144,000 (provisional figure).
Sources: *Annuario statistico*, 1954 and 1955; and *Relazione generale sulla situazione economica del Paese*, 1953, 1954 and 1955; except for figures in italics which have been estimated independently in order to complete the table. Net emigration in the working-age groups has for this purpose been assumed to represent 75 per cent of total net emigration. The population figure for 1950 is obtained from the old ISTAT series rectified in accordance with the 1951 Census figure.

(30) *Relazione generale sulla situazione economica del Paese* (relating to the year 1955).

the population of working-age may perhaps be put at 60 per cent, giving an addition to the labour force of over 700,000. It is believed also that between two and three hundred thousand persons left their former places of residence and work in the countryside, in search of employment in non-agricultural activities. The addition to the labour force seeking employment outside of agriculture may thus have been of the order of 900 thousand or a million.

Although the Labour Exchange figures for registered unemployment (see Table 6 above) showed an increase of nearly 300,000, this figure does not — as was remarked earlier — necessarily signify a corresponding addition to the numbers totally without work: indeed the addition to unemployment in this strict sense may have been nil or even negative. Possibly, then, the increase in non-agricultural employment during the period may have been sufficient to absorb close to a million persons.

Where these people found work must remain partly conjectural. What seems to be clear is that only a very small number was absorbed by Group I of industry, and that the bulk must therefore have gone into Group II of industry, and into transport and commerce.

Our next task is to examine in more detail what happened in Group I of industry.

5. Employment, Output and Productivity in Group I of Industry.

We have seen that the annual averages of the monthly employment figures given by the Ministry of Labour show an increase, between 1950 and 1955, for Group I of the modest dimensions of 1.8 per cent. At the same time an increase occurred in the average length of the working week. In 1955 the average number of hours worked per man in Group I was 2.4 per cent above the 1950 figure. This increase taken in conjunction with that in employment gives a rise in the total number of man-hours worked of 4.2 per cent.

The increase in the volume of employment in the broader sense was thus due more to an increase in hours worked per man than to an increase in the number of workers. This fact is partly ascribable to special circumstances. The first of these was the substantial proportion of the total number of workers who were on short time in 1950 — a proportion which, as the following table indicates, was subsequently reduced.

LENGTH OF WORKING WEEK
(Ministry of Labour Sample) (31)

	1950	1951	1952	1953	1954	1955
	Average of monthly data					
Percentage of workers working:						
a) Less than 40 hours	15.2	13.0	15.3	12.9	11.2	12.6
b) 40 hours	19.4	16.1	16.3	14.7	13.3	12.7
c) More than 40 hours	65.4	70.9	68.4	72.4	75.5	74.7

The second was the preference among employers — given the difficulty under the prevailing conditions in the labour market of making dismissals in slack times — for resorting to overtime work (32) rather than to extra shifts which involve the hiring of additional workers (33). This movement towards increasing use of overtime also has a natural limit, however, and seems already to have been on the wane during the last year.

The index of industrial production (excluding building) compiled by the ISTAT indicates that over the five years aggregate output in all the sectors covered increased by 56 per cent. We have again divided the sectors into two groups: those belonging to Group I and those belonging to Group II (see Table 14 below).

(31) In this table Group II sectors have not been eliminated from the total.

(32) The « normal » working week — for hours in excess of which overtime rates are paid — is generally 48 hours, although in many cases it is fixed by collective contract at a lower figure (in some instances as low as 40 hours).

(33) The advantage to the employer is magnified by the fact that the extra costs due to the overtime rates are largely offset by the savings in social insurance charges.

It may be assumed that an approximate (34) coincidence of frontiers exists between our Group I employment figures and our Group I output figures.

Under Group II the ISTAT index covers a somewhat broader range of products than is covered by the Ministry of Labour figures for employment: thus it gives a much fuller coverage to food and allied trades (including tobacco), and it extends to the furniture industry. Otherwise it is weak in some of the same spots as the Ministry of Labour data, e.g. the clothing industry (under which it covers only footwear), small engineering, and miscellaneous manufactures. Even in the food, and the wood and furniture sectors, the fact that the ISTAT is obliged to compile the sector indices from returns made by a few, i.e. the larger firms amongst the vast number of which these sectors are constituted, means that those indices are not necessarily representative of the movement in total production in the relevant sectors. Thus a large part of Group II is again either too poorly represented or not represented at all even in the production index.

Table 12 summarizes (in index form) the movement between 1950 and 1955 in production, in employment, and in hours worked, in Group I of industry.

TABLE 12

OUTPUT, EMPLOYMENT AND PRODUCTIVITY IN GROUP I OF INDUSTRY (1)
(Indices)

	Output (2)	Employment	Total man-hours worked	Output per man-hour
1950	100	100	100	100
1954	150	101.4	104.6	143
1955	164	101.8	104.2	157

(1) The indixe of output relates to annual figures, and the indices of employment and hours to averages of monthly figures.

(2) Original base 1938.

(34) The production index, however, omits « printing and publishing » which is included in the Group I employment figures.

The growth in output — obtained with an increase of only 1.8 per cent in the number of persons employed and 4.2 per cent in the number of man-hours worked — was 64 per cent. It obviously came for by far the major part from a rise in average productivity per man-hour worked, and only to a small extent from an increase in the volume of employment, either in the narrower sense of the number of workers or in the broader sense of the number of hours worked (35). The average productivity *per man-hour* appears to have risen by some 57 per cent.

Tables 13 and 14 reproduce the movements in employment and output by sector (36). They allow us to examine two aspects of the small absorption of labour. The first is the exiguousness of the growth in employment in proportion to that in output in individual sectors. The second is the decline in the relative importance — in terms of both employment and output — of the more labour-intensive sectors as against the less labour-intensive ones.

The percentage movements in output for individual sectors in Group I are set out side by side with those in employment in Table 15. In some sectors the number of workers actually decreased. This is true not only in textiles, where in the most important branch — that of cotton — production declined, and in leather where output likewise fell. It is true also for steel where the increase in production was very large (127 per cent). And in the chemicals, and petroleum and coal derivates sectors, where the increase in production was also exceptionally high (108 and 204 per cent respectively), the increase in employment was comparatively small (15 per cent for the two sectors combined); similarly

(35) There was actually a slight decline in the hours worked between 1954 and 1955.

(36) Group II sectors are included in both tables for the sake of completeness, though the employment figures and, in most sectors also, the production figures cannot, for the reasons already given, be depended upon to give a reliable indication of the true movement.

TABLE 13

INDUSTRIAL EMPLOYMENT (WORKERS)
MINISTRY OF LABOUR SAMPLE, BY SECTOR (1) (2)

	1950	1955	1955 Index (1950 = 100)
	(Thousands)		
GROUP I			
A. *Mining*	57.2	54.7	95.6
B. *Manufacturing*:			
Textiles	525.3	448.9	85.5
of which:			
cotton	(249.0)	(204.4)	(82.1)
wool	(115.7)	(108.4)	(93.7)
Paper	35.3	37.0	104.8
Printing	34.5	40.2	116.5
Leather	16.6	14.3	86.1
Rubber	33.0	32.8	99.4
Chemicals and allied trades	108.6	125.3	115.4
Processing of non-metalliferous minerals	103.4	129.9	125.6
of which:			
bricks	(34.6)	(55.0)	(159.0)
cement	(16.5)	(18.3)	(110.9)
Metal manufacture	98.8	99.2	100.4
of which:			
iron and steel	(82.6)	(81.3)	(98.4)
Engineering:			
Re-smelting	33.9	43.5	128.3
Non-electric	283.8	331.1	116.7
Electric	55.7	64.4	115.6
Transport equipment	151.9	141.9	93.4
of which:			
motor vehicles and aircraft	(72.8)	(76.1)	(104.5)
Total engineering	(525.3)	(580.9)	(110.6)
C. *Electricity*	33.9	37.3	110.0
Total Group I	1,571.9	1,600.5	101.8
GROUP II			
B. *Manufacturing*:			
Food	92.8	106.3	114.5
Clothing (footwear and hats)	36.5	39.2	107.4
Wood	19.5	26.7	136.9
Gramophones and films	1.5	1.8	120.2
Total Group II	150.3	174.0	115.8
Total all industries covered	1,722.3	1,774.5	103.0

(1) The Ministry's data related to 16,419 establishments (of which 1,602 were « inactive » in June 1950, and to 17,488 (of which 619 were « inactive ») in June 1955. At the first date 12,019 of the « active » establishments belonged to Group I, and 2,798 to Group II. At the second date the corresponding figures were 13,894 and 2,975 respectively.

(2) Annual averages of monthly data.

TABLE 14

INDICES OF INDUSTRIAL PRODUCTION

	1938 = 100			Converted to base 1950 = 100	
	1950	1954	1955	1954	1955
GROUP I					
A. *Mining*	*103*	*200*	*241*	*194*	*234*
1. Metalliferous minerals	79	115	130	146	165
2. Fuels	200	665	872	332	436
3. Various non-metalliferous minerals	90	121	130	134	144
B. *Manufacturing*	*121*	*180*	*198*	*149*	*164*
1. Textiles	109	117	104	107	95
(cotton)	119	115	100	97	84
(wool)	123	164	147	133	120
2. Paper and paper-working	105	134	144	128	137
3. Leather, skins	90	91	82	101	91
4. Rubber goods	132	194	202	147	153
5. Chemical and allied trades	140	278	313	199	224
(chemicals)	130	240	270	185	208
(coal and oil derivates)	258	733	784	284	304
(artificial textile fibres)	100	114	118	114	118
6. Processing of non-metalliferous minerals	120	174	207	145	172
7. Metal manufacture	104	173	213	166	205
(iron and steel)	102	180	232	176	227
8. Engineering	129	178	203	138	157
(non-electric machines)	133	166	195	125	147
(electric machines)	112	108	109	96	97
(transport equipment)	132	214	244	162	185
(of which: motor vehicles)	149	277	298	186	200
C. *Electricity*	*159*	*228*	*245*	*143*	*154*
Total Group I	*125*	*187*	*205*	*150*	*164*
GROUP II					
B. *Manufacturing*:					
1. Food and allied trades, including tobacco	136	158	163	116	120
2. Clothing (footwear)	77	92	89	119	116
3. Wood, furniture and fixtures	123	173	176	141	143
C. *Gas*	153	157	148	103	97
D. *Construction*	123	282	326	229	265
Total Group II, excl. construction	*130*	*158*	*161*	*122*	*124*
Total Group II, incl. construction	*128*	*189*	*202*	*148*	*158*
Total Groups I and II, excl. construction	*126*	*181*	*196*	*144*	*156*
Total Groups I and II, incl. construction	*126*	*187*	*204*	*148*	*162*

Source: ISTAT, *Annuario Statistico*, 1955, and *Bollettino mensile di Statistica* 1956, No. 6; except for « construction » which comes from the Research Division of the Bank of Italy.

in the automobile industry, where output doubled, the addition to employment was very modest (4.5 per cent).

TABLE 15

COMPARISON OF MOVEMENTS IN OUTPUT AND EMPLOYMENT IN GROUP I OF INDUSTRY 1950 TO 1955

	Output	Employment
	Percentage increase (+) or decrease (—)	
A. Mining	+ 134	— 4.4
B. Manufacturing:		
1. Textiles	— 5	— 14.5
of which:		
cotton	— 16	— 17.9
wool	+ 20	— 6.3
2. Paper	+ 37	+ 4.8
3. Printing	n. a.	+ 16.5
4. Leather and skins	— 9	— 13.9
5. Rubber	+ 53	— 0.6
6. Chemicals	+ 108	+ 15.4
7. Petroleum and coal derivates	+ 204	
8. Cellulose and nat. and syn.-fibres	+ 18	n. a. (1)
9. Non-metalliferous minerals	+ 72	+ 25.6
10. Metallurgical	+ 105	+ 0.4
of which:		
iron and steel	+ 127	— 1.6
11. Engineering	+ 57	+ 10.6
of which:		
motor vehicles	+ 100	+ 4.5
C. Electricity	+ 54	+ 10.0

n.a. = not available.
(1) Partly included under textiles.

Even if part of the apparent high increase in productivity (37) in certain sectors is imputable to other factors than additional investment (e.g. to the fuller utilisation of previously under-employed man-power as well as plant and equipment, and to technical innovations and improvements in plant outlay and organisation not associated with extra capital expenditures), the table hardly leaves any doubt that in almost every sector taken individually, whatever additional capital investment took place during the period (38) must have gone very largely into raising the capital-labour ratio of a constant, or declining labour force rather than into equipping an expansion to that force.

The raising of the average capital-labour ratio over Group I as a whole seems to have been partly accomplished, however, through a shift in the relative weight of different sectors. On balance the sectors with high capital-coefficients expanded proportionally more than the sectors with lower capital-coefficients. This tendency is illustrated by Table 16 which attempts to make a triple grouping of the various sectors according to whether they have high, medium, or low capital-labour ratios. Almost all of our Group I sectors fall into the first two categories. The table shows that the structure of output changed considerably over the period. A very rapid expansion occurred in those sectors where capital-labour ratios are high, e.g. in the hydro-carburates sector (mostly natural gas), in chemicals, in petrol refining and in steel. An actual decline, or comparatively modest increase took place in the two sectors, textiles and engineering respectively — both sectors with relatively low capital-labour ratios — which have traditionally formed the backbone of Italian industry and the two largest areas of industrial employment (39).

(37) The comparison of the output with the employment figure somewhat overstates the increase in productivity in the case of most sectors since it does not allow for the change (mostly upwards) in hours worked per man. The annual averages of the Ministry of Labour figures for hours worked per month per worker in the sectors mentioned moved as follows:

	1950	1954	1955
Cotton	155	153	140
Wool	154	162	156
Leather	157	167	160
Steel	178	183	184
Automobiles	173	179	177
Chemicals and allied	176	181	179

(38) As was indicated earlier, no statistics are available which allow us to measure what part of the industrial capital formation of the period was absorbed by Group I of industry. Certainly, however, it must have absorbed a major part.

(39) It should be observed that the output figures for most of the sectors comprised in the lowest of the three groups, and

TABLE 16

INDICES OF INDUSTRIAL PRODUCTION AND OF EMPLOYMENT FOR SECTORS GROUPED (1) ACCORDING TO DEGREE OF CAPITAL INTENSITY

(1950 = 100)

	Output		Employment	
	1954	1955	1954	1955
I. *High capital-intensity*:				
Mining: fuels	332	436	n. a.	n. a.
Chem. and allied (2)	199	224	111.1	115.4
Rubber	147	153	97.3	99.4
Metal manufacture	166	205	98.9	100.4
Electricity and gas (3)	139	147	108.3	110,0
TOTAL I (4)	172	194	104.7	107.4
II. *Medium capital-intensity*:				
Textiles (2)	107	95	90.9	85.5
Paper	128	137	105.7	104.8
Construction materials	145	172	119.7	125.6
Engineering	138	157	106.0	110.6
Mining: metalliferous minerals	146	165	n. a.	n. a.
Mining: various non-metalliferous minerals	134	144	n. a.	n. a.
TOTAL II (4)	126	133	100.5	100.6
III. *Low capital-intensity*:				
Leather and skins	101	91	89.8	86.1
Food and allied	116	120		
Clothing (footwear)	119	116		
Wood and furniture	141	143		
TOTAL III	121	123		

(1) The grouping is essentially in accordance with the figures of average fixed capital per employee calculated by Prof. Guidotti.

(2) Output and employment figures are only approximately comparable owing to different classification of artificial textile fibres.

(3) Employment figures for electricity only.

(4) Employment figures exclude mining.

n.a. = not available.

Part of the higher than average growth of output in the sectors with high capital-intensity came, it is true, from the fact that the productivity increases in those sectors were above the average for Group I as a whole.

belonging to our Group II of industry, are, for reasons already given, probably less reliable than those of the top and middle groups.

Part did, however, derive from the heavier expansion in employment. Complete figures of the percentage movements in employment in the high, and medium capital-intensity groups, respectively, are lacking owing to the impossibility of separating out employment in the fuels (natural gas) sector of mining from that in other mining sectors. Exclusive of mining, however, the high capital-intensity group shows an increase in employment of 7.4 per cent, and the middle group one of only 0.6 per cent. The inclusion of the relevant mining sector in each group would certainly widen this gap. Indeed, it is most probable that while employment in the highly capital-intensive group increased by appreciably more than 7 per cent, that in the moderately capital-intensive group actually declined. What seems almost certain, then, is that the additional employment in Group I of industry went, on balance, entirely into the sub-group where the capital required per man is very high.

In the search for an explanation of the double source of increase in the average capital-labour ratio several factors need to be taken into account.

It is likely that the tendency for investment in individual sectors to be directed towards improving the equipment of existing plants would have been particularly marked during the period, owing to the need, which was mentioned earlier, for catching up with the technical advances in which Italy had previously fallen behind, as well as for keeping pace with current changes. And no doubt the shift in the structure of industrial employment and output can in part be ascribed, as in the case of textiles, to changes in demand or, in the case of the fuels sector, to the discovery of new resources. It is no less true, however, that the « capital-deepening » process must have been enhanced by another factor, namely increasing wage costs.

Even if it is open to doubt — and this is a point which we shall not discuss here — whether in practice rising wage levels exert a strong influence on the « capital-deepening »

process in the sense of increased mechanisation in individual sectors, there is still good reason for supposing that they will encourage that process in the other sense — that of a shift in the structure of industry towards a heavier relative weight of the capital-intensive sectors. For, by affecting the *relative* costs of different sectors, the wage rise stimulates the expansion of the sectors with high capital-coefficients, and therefore relatively low wage-sensitivity, at the expense of those with low capital-coefficients and high wage-sensitivitiy (40). In this second way, even if not in the first, higher wage rates will lead to a higher average capital-labour ratio than would otherwise occur.

In an economy which is highly dependent on foreign trade an important part of the effect of wage movements will be on the composition of exports and imports. Rapidly rising wage rates will diminish the tendency which would otherwise exist for Italy to export the products of the industrial sectors with relatively low capital-coefficients, and to import those of sectors with relatively high capital-coefficients.

An impression that something of this kind actually took place is given by an examination, for some of the principal commodity groups, of the way in which Italy's relative position in world export markets has moved over recent years.

In textiles it appears that Italy's sensitiveness to the « crisis » after 1951 greatly exceeded that of other countries. According to OEEC figures, the value of her textile exports in 1955 was, despite the slight revival since the previous year, not much more than half what it had been in the peak year 1951, and only about 80 per cent of the level of 1950. The sharpness of this drop meant that she lost ground relative to all the principal exporting countries for which OEEC figures are available (see Table 17). Part of this phenomenon has been ascribed to her lack of protected colonial, or commonwealth markets such as are enjoyed by the United Kingdom, Belgium, France and the Netherlands. An examination of the OEEC figures for textile exports from the individual countries by destination (41) seems, however, to indicate that although this factor may have helped the United Kingdom, and still more France, it played a minor role in the cases of Belgium and the Netherlands — both countries which, along with Western Germany, improved their relative position at the expense of other countries in the group. It appears highly probable, therefore, that a large part of the decline in Italy's relative, as well as absolute position as a textile exporter was due to the cost factor.

Evidence pointing in the same direction is derived from an examination of her share of the world export market for engineering products, a market which, unlike that for textiles, was a rapidly expanding one during the years under review. Here it appears, again according to OEEC figures, that up to 1954 Italy ranked (along with the United Kingdom and Canada) among the group of countries whose exports showed the smallest percentage expansion, though she seems to have made a long stride forward in 1955.

It thus looks as though the two relatively labour-intensive sectors of industry which have held first place among Italian exports in the past and which would, it might appear, need to gain an increasing share of the world export market in the future if the goal of full employment were to be quickly approached, were in recent years actually in danger of losing ground to Italy's competitors.

The picture was different in the heavy industries where the degree of labour-intensity

(40) In the theoretical literature a certain ambiguity surrounds the explanation of the influence of wage levels on the method of production in individual lines (when that is variable), and on the structure of employment and output as between different lines. The formulation used in the text above must be regarded as a shorthand expression for a much more complicated causal nexus which we cannot discuss on this occasion.

(41) Not reproduced here.

TABLE 17

MOVEMENTS, FOR SELECTED COUNTRIES, OF EXPORTS OF TEXTILES, ENGINEERING PRODUCTS, AND CHEMICALS, 1950 TO 1955

Exporting Country	Values (Millions of dollars)		Indices of values (1950=100)		
	1950	1955	1951 (3)	1954	1955
A. *Textiles* (1):					
Belgium-Luxembourg	272.1	294.2	136	107	108
France	500.1	469.2	126	100	94
Italy (2)	*340.1*	*275.2*	*155*	*77*	*81*
Netherlands	132.0	202.6	135	146	153
United Kingdom	1,005.9	870.1	131	91	86
United States	397.0	454.9	159	115	115
Western Germany	95.1	299.6	221	282	315
B. *Machinery* (4) *and Transport Equipment*:			(5)		
Belgium-Luxembourg	155.2	308.3	175	167	199
Canada	215.4	284.5	189	130	132
France	441.5	786.1	160	162	178
Italy (2)	*213.1*	*371.5*	*137*	*140*	*174*
Netherlands	166.6	415.5	158	231	249
Sweden	251.1	382.4	142	148	152
United Kingdom	2,174.4	3,033.4	124	126	140
United States	3,207.7	5,394.1	158	162	168
Western Germany	472.4	2,456.5	309	432	520
C. *Chemicals*:					
Belgium-Luxembourg	135.0	186.5	151	129	138
Canada	109.6	245.6	137	182	224
France	220.6	360.2	161	153	163
Italy (2)	*46.4*	*127.4*	*193*	*239*	*275*
Netherlands	107.9	192.5	147	159	178
Sweden	23.5	45.4	147	164	193
United Kingdom	403.7	651.9	128	141	161
United States	712.9	1,120.7	138	144	157
Western Germany	220.9	680.4	192	274	308

(1) Includes yarn, fabrics, made-up articles and related products.

(2) 1950 figure is an estimate.

(3) For most of the countries 1951 was a peak year for exports of textiles.

(4) Including electrical machinery, apparatus and appliances.

(5) 1952 figures.

Source: *OEEC Statistical Bulletins, Foreign Trade*, Series IV.

is low. In chemicals, starting from small beginnings, Italy's exports expanded over the five years at a pace which, among those countries for which OEEC figures are available, was exceeded only by Western Germany. Even in steel Italy had by 1955 made an appreciable incursion into the export field. And the same was true of another capital-intensive branch — petrol refining.

The extent to which industrial wages (in Group I) actually rose during the five years is examined in the following section.

6. Industrial Wage Rates.

An approximation (42) to the movement in average wage rates in Group I of industry is given by the wage data published by the Ministry of Labour for exactly the same industrial sample as that underlying the Ministry's data for employment and hours. The figures shown in Table 18 relate to wages actually paid, inclusive of all elements. They represent the average hourly rate for all workers (married and unmarried) together, inclusive that is of family allowances. And they make a *pro rata* allowance for: paid holidays (public and annual); overtime pay, and extra pay for night shifts and for working on public holidays; and Christmas and other bonuses. The annual averages for this series indicate an increase in hourly wage rates between 1950 and 1955 of nearly 36 per cent (43).

TABLE 18

MOVEMENTS IN WAGE RATES OF INDUSTRIAL WORKERS, MINISTRY OF LABOUR SAMPLE (1)

	1950	1951	1952	1953	1954	1955
1. Average hourly rates (Lire)	185.9	204.7	220.3	229.3	237.5	252.0
2. Index	100.0	110.1	118.5	123.3	127.8	135.0

(1) The figures are the annual averages of the monthly data. They refer to all the sectors covered by the Ministry. (Group II sectors have not, that is to say, been eliminated).

(42) A more exact measure of the movement of wages in Group I of industry would be obtained by eliminating from the figures the items relating to Group II sectors. The difference is doubtless slight, however.

(43) This index fails to take account of whatever change may have taken place in the proportional incidence of social insurance charges (other than family allowances) borne by the

The levels of earnings (based, however, on the minimum contractual rates of pay for the « direct » wage, which were appreciably below the effective rates) (44) and of the « cost of labour » (inclusive of social insurance charges) which prevailed in 1945 (45) in Northern Italy in three of the most important industries are shown in Table 19.

TABLE 19

AVERAGE DAILY (1) RATES OF PAY AND COST OF LABOUR AMONG SKILLED WORKERS IN SELECTED, INDUSTRIES, 1955

(Lire)

	Textiles (2) (Biella)	Engineering (Turin)	Chemicals (Milan)
1. Earnings (excluding family allowances, etc.)	1,410	1,590	1,652
of which:			
(a) Direct earnings (3)	1,190	1,336	1,389
(b) Indirect earnings (4)	220	254	263
2. Amount retained for contributions payable by worker and income tax	71	84	88
3. Family allowances and social insurance contributions paid by employer	545	698	676
of which:			
(a) Family allowances	258	309	310
(b) Social insurance charges	287	389	366
4. Cost of labour (1+3)	1,956	2,288	2,328

(1) Relating to eight-hour day.

(2) Women, first category.

(3) These are the minimum contractual rates.

(4) *Pro-rata* allowance (over total number of working days) for paid holidays, and Christmas and other annual bonuses.

Source: *Compendio Statistico Italiano*, 1956.

employer. The *Confindustria* publishes an index of the « cost of labour », or cost of a day's work of eight hours. The cost is adjusted to include paid holidays, Christmas and other bonuses, and family allowances in addition to other social insurance charges. It is, however, based on the minimum contractual rates for the « direct » wage instead of the effective rates. This index shows an increase between 1950 and 1955 of 34.4 per cent, but it fails to take account of the increase which apparently occurred in the gap between the contractual rates for the « direct » wage and the rates actually paid (Cf. footnote 44 below).

(44) A calculation made by the *Confindustria* shows that actual hourly earnings (taken from the Ministry of Labour sample) were on the average 25.3 per cent higher than contractual hourly wages in 1950 and 28 per cent higher in 1955.

Since the price level increased between 1950 and 1955, the rise in money wage rates during that period reflects a more modest rise in real wage rates. A very important distinction has, however, to be made here on account of the dissimilar movements of different sectional price levels, some of which have been shown in Table 4 above.

The official (ISTAT) cost of living index shows (on the basis of the annual averages) a rise of 23 per cent. This index, though in process of revision, is at present still based on the 1938 weights, and a more appropriate index to take is probably that which is used for purposes of the sliding scale. The index underlying the latest sliding scale agreement (introduced in the spring of 1951) gives a somewhat lower weight to food expenditures, and a higher weight to clothing, than does the ISTAT index. Over the years (1951-55) for which both indices are available the sliding scale index rose considerably less than the ISTAT index, as is shown by the following comparison:

MOVEMENT IN COST OF LIVING

(Annual averages)

	1950	1951	1955	Percentage Increase 1951 to 1955
ISTAT (national) index (1938=1)	48.5	53.2	59.7	*12.2*
Sliding scale (national) index (November-December 1950=100)	. . .	106.9	115.8	*8.3*

Probably we may take the increase in the cost of living between 1950 and 1955 as having amounted to at most 20 per cent. And if we deflate the 36 per cent rise in money wages correspondingly, it appears that the increase in the average real rate of earnings of the industrial worker — in terms of the

The Ministry of Labour figures used here are the series for « direct » earnings *ex*clusive of the accessory elements due to holiday pay, bonuses, and family allowances.

(45) The figures are the averages for the year.

goods bought by him — was 12 per cent or higher.

Though this may be a relevant figure to take for purposes of measuring the improvement in the real standard of living of the average industrial worker, it is not an adequate index of the change in the average real *cost* of labour to the industrial employer. For the cost of living index includes items which are irrelevant to the price level of industrial output, and which did not move in the same proportion during the period under review.

In the first place, food prices, which have a heavy weight in the cost of living index, rose more than did the prices of industrial products (46). In the second place, a partial upward adjustment was made in rents, which had previously been controlled at extremely low levels — an adjustment which represented a redistribution of final income in favour of house-owners rather than an addition to the price level of current output (47).

For purposes of measuring the increase in the rate of remuneration of workers in Group I of industry *in terms of the output of that group*, it would be necessary to use an index of the wholesale prices of the collection of goods produced by the group. It is, however, difficult to obtain a sufficiently representative index. The nearest approach is probably the elaboration, made by the Bank of Italy, of the ISTAT indices of wholesale prices, eliminating all the food items (raw and processed). This index of industrial prices (see Table 4 above) shows a rise of only 3 per cent. An obvious defect of the index is that, like most indices of its kind, it relates primarily to raw materials and semi-finished goods, and is weak in finished products.

The correction of the 36 per cent rise in money wage rates for a 3 per cent rise in prices gives the result that real wage rates (in the sense of the cost of labour in terms of output) increased, in Group I of industry, by about 32 per cent. This estimate is, owing to the imperfect representativeness of the price level used, subject to a very considerable margin of error.

One further aspect of the recent movement in wage rates merits attention; it concerns the part played by the sliding scale system under which wages move up automatically with the cost of living.

Expenditures on food, drink and tobacco still account for a very high proportion of total expenditure in the average consumer's budget, and they have a correspondingly heavy weight (66 per cent) in the cost of living index underlying the sliding scale. The movement in the index is thus dominated by the movement in food prices. Since the terms of trade between food products and industrial output went against the latter over the five years, the sliding scale by itself was an important factor increasing the real wage burden *in terms of industrial output*. Or, putting the same thing in another way, it appears that even if real industrial wage rates measured in terms of the average collection of goods consumed by the industrial worker had just remained constant (i.e. if money wage rates had merely, but fully, kept pace with the rise in the cost of living), real wage rates in terms of the average collecton of goods produced by him — in Group I of industry — would still have increased quite substantially.

(46) According to the available price indices (see Table 4 above), this discrepancy was due to two principal causes: The first was the movement, after the temporary dip of 1951, in the terms of trade between foodstuffs and industrial goods in favour of the former (cf. line III of Table 4). Some part of this movement must have reflected the adaptation of the price structure to the liberalisation of imports of industrial goods, which meant the removal of the protection from foreign competition which had previously been enjoyed by certain sectors of industry; and since the adaptation is by now presumably complete no further movement from this source is to be expected in the future.

The second cause was the increase, most of which took place between 1950 and 1952, in retail margins in the food trade (cf. line IV of Table 4).

(47) The upward adjustment of rents played, however, a minor role during the period under review, owing to the small weight of rents — up till now — in the cost of living index. It is possible that this factor might become more important in the future as rents rise further and as — what seems probable — their weight in the cost of living index is raised.

7. Productivity, Wages and Profits in Group I of Industry.

When the estimate of 32 per cent for the rise in real wage costs is set against that of 57 per cent for the increase in productivity in Group I — both figures being very broad approximations it should be remembered — it appears that the proportion of the increase in productivity absorbed by higher wages may have been between a half and two-thirds. A good deal of attention has been focussed on what appears to be such a wide gap between the increase in industrial productivity and the rise in real wage rates; and it may be worth while therefore to look somewhat more closely at the practical significance of this gap.

Even if the above measure of the gap could be regarded as sufficiently accurate, several qualifications would need to be made to the conclusion which is commonly drawn that it is indicative of an unduly large increase in profits.

The main qualifications are three: First, it should be remarked that Group I of industry — the only part of the Italian economy for which relatively reliable data are available concerning movements in all the three elements of: production, employment and labour remuneration — is too small a part of the whole Italian economy, and too highly dependent on purchases of goods and services from outside the group, to allow the application, even as a first approximation, of the equation according to which increases in productivity are wholly reducible to increases in wages and profits. This equation is based on the simplified model of the « self-contained » productive system, which is nowhere near characteristic of Group I. Even apart from the latter's high dependence on imports from abroad, the very fact that it is the sector of the Italian economy in which productivity certainly increased fastest, creates a presumption that its « terms of trade » with other domestic sectors (such, for example, as transport and construction), which were less able to offset comparable increases in wage costs by increases in productivity, deteriorated. On the other hand, the impossibility of broadening the area of the calculation to include the whole economy, or even the whole of industry, so as to obtain a closer approach to the « self-contained » system in which inter-sector price differences are cancelled out in the general average, is obvious from the fragile nature of the data available for the area outside Group I of industry.

Nor is it possible to obtain an index which is representative of the prices of the goods and services (raw materials, fuel, equipment, transport, building, etc.) purchased by Group I from sources, either domestic or foreign, *outside the group*, an index, that is to say, which would allow us to estimate the change in the « terms of trade » for this group. We are thus unable to say how great a part, if any, of the group's increase in productivity was absorbed by a change of this kind.

A second consideration further invalidates the inference that a positive difference between the increase in productivity and the increase in real wage rates in Group I is necessarily indicative of swollen profits in the sense of profits *per unit of capital* invested. This is the fact that we do not know what happened to the average capital-output ratio in Group I: in the case that it rose, a given increase in the absolute share of profits in output might fail to coincide with an increase in the rate of profit per unit of capital invested.

A third point to keep in mind is that if it is true that in 1950 industry still had on its payrolls labour which was in excess of what was required but which could not be dismissed, and that many sectors were working not only below their labour-capacity but also below their plant-capacity, the proportion of output absorbed by wages at that time may have been abnormally high, and profits for the group as a whole abnormally low. It would then follow that the apparent smallness of the proportion of the increase in output since 1950 that was taken by wages may

be due in part to the restoration of more normal conditions.

No comprehensive figures are available concerning the movement which actually took place in industrial profits (48). Doubtless the movement in profit rates varied widely from sector to sector, with individual sectors probably enjoying substantial increases from initial levels that were already high. The point to stress here is that the extent of this phenomenon over Group I as a whole cannot — for the reasons given — be deduced from a simple comparison between the productivity and wage statistics for that group.

In any case it should be noticed that, if it is true that monopoly power has in some sectors been used to keep profits unduly high, this must be regarded as an added factor leading to high selling prices and setting a brake on the expansion of Group I of industry. Both factors, i.e. rapidly rising wage rates as well as a large monopoly element in pricing policy, will tend to slow down the employment absorption capacity of Group I.

8. Areas of Labour Absorption Outside Group I of Industry.

Group I of industry — referring it may be repeated to only about a half of industrial employment at the Census date, and accounting over the five years for an addition to employment of perhaps no more than 40,000 persons — is, as we concluded earlier, the only part of the whole economy for which approximately reliable figures are regularly available for the percentage movement, at least, in employment.

Group II of industry is, as we saw, poorly documented not only as regards the movement in employment but also — over many sectors — as regards the movement in output. Nor can we be sure, for a large part of it at least, that average levels of earnings moved in accordance with the wage data applying to Group I. The prevalence of self-employed persons and of family associates and others not in receipt of contractual remuneration, and of tiny establishments which in many cases escape union attention, means that levels of earnings in this zone of industry are largely independent of those set by union contracts. In Group II, exclusive of construction, the total of self-employed artisans, « family associates » attached to artisan and other units, and « co-operators », registered by the Census, reached 615 thousand (see Table 20), thus accounting for over 40 per cent of all employees in the group; and the proportion of all employees working in establishments with 10 or fewer employees was about 64 per cent (see Table 8 above).

TABLE 20

CATEGORIES OF SELF-EMPLOYED (ARTISANS) (1), AND OF DEPENDENT EMPLOYEES NOT IN RECEIPT OF CONTRACTUAL REMUNERATION: CENSUS DATA

(Thousands)

	Heads of artisan units (2)	Family associates of artisan and other units	« Co-operators »	Total
Group I . . .	63.6 (3)	39.2	.8	103.6
Group II (excl. construction)	459.5 (3)	154.8	1.1	615.4
Construction .	14.9	12.0	3.6	30.5
Total . .	538.0	206.0	5.5	749.5

(1) The titular heads of non-artisan units are not separately distinguishable.

(2) Taken as equivalent to « number of artisan units ».

(3) The following sectors had no « artisans »: mining; artificial and synthetic textile fibres; water; gas; tobacco.

In the non-industrial branches of activity — including transport and commerce — direct evidence about the movement in employment is likewise lacking. And, in commerce, information about the movement in earnings levels is again poor, since here also a very large part of total employment is doubt-

(48) No attempt is at present made — for obvious reasons — in the national income statistics to give figures for « personal income » divided up according to the source (employment, dividends and interest, etc.), or for « corporate » income.

less independent of the conditions established by union contracts. According to the Census, no less than 1.3 million persons out of a total of 1.6 million (or that is nearly 80 per cent) were attached to firms employing 5 or fewer persons.

The answer to the question of where and at what levels of income, the bulk of the additional employment of the period 1950-1955 took place remains a matter for conjecture. Within Group II of industry, construction was obviously responsible for a large increase — reaching several hundreds of thousands. Transport probably absorbed a smaller but still substantial number. And since both of these branches of activity are mostly in the hands of medium- or large-scale units to which presumably collective wage contracts apply, it is also fairly certain that the great majority of the employees in these branches enjoyed the wage increases which were established in those contracts, and which were comparable in magnitude with the increases enjoyed by Group I of industry (49).

It seems evident also that other sectors in Group II of industry (besides construction, that is) must have expanded — in terms of employment — a good deal faster than did the sectors in Group I. It is probable, therefore, that an increase rather than a decrease took place in the numbers attached to artisan-type enterprises and to other small establishments. Most likely there remained in this part of industry large zones of « under-employment », low productivity, and very low earnings per head. Similar conditions probably prevailed in commerce.

These conjectures if true would signify a marked unevenness in the development process of the period 1950 to 1955. Part of the employed labour force, attached especially to Group I of industry, to certain sectors of Group II, and to transport, certainly enjoyed substantial gains, amounting to 12 per cent or more, in real earnings per head. At the other end of the scale, not only did the number of the unemployed fail to diminish to any appreciable extent, if at all (it probably remained somewhere between 1.5 and 2 million). But it is quite likely, also, that the so-called « under-employment » problem was not substantially relieved, i.e. that a large part of the employed labour force — in the « artisan sectors » of Group II of industry, in commerce, and in agriculture — remained at very low levels of earnings per head.

(49) The contractual rates in construction rose, according to the ISTAT indices, by more than the average for the whole group of industrial sectors, while those in transport rose a little less than the average.

9. Industrial Development in the Mezzogiorno.

The special importance of the problem of industrial development in the Mezzogiorno may justify a brief excursion into some of the evidence which the same source material as we have used for Italy as a whole provides for the Mezzogiorno taken separately.

A grouping of the Census data for industrial employment in the Mezzogiorno in the manner adopted previously for all Italy gives the results shown in Table 21.

At the Census date the Mezzogiorno had not many more than 200,000 employees in what we have called Group I of industry; and of these, nearly a quarter, were in mining. In Group II, including construction (50) on the other hand, it had over 530,000. In Group I the Mezzogiorno thus had only 9 per cent of the total for the country as a whole, whereas in Group II it had 27 per cent. Within Group II the proportion was particularly high in the food and tobacco sectors.

There was thus a heavy concentration in those industrial activities which are conducted predominantly by artisan, and other very small-scale units. In industry exclusive of construction, nearly 60 per cent of all employees in the Mezzogiorno were attached to units with 10 or fewer employees, the comparable figure for the North being less than one-quarter.

(50) The figure for construction is probably too low. See p. 160 above.

By far the greater part of the industrial activity of the Mezzogiorno — as it was towards the end of 1951 — thus fell outside the field of activity for which the Ministry of Labour statistics can be regarded as giving an even approximate guide to the movement in employment.

A regional analysis of the Ministry of Labour and the Census data gives the result that the Ministry's figure (of November 1951) for employment in Group I of industry, in the Mezzogiorno, represented between 55 and 60 per cent of the Census figure for that area. This was a lower coverage than that (of nearly 70 per cent) obtained for Italy as a whole. The difference is no doubt due to the greater importance, even in Group I of industry, of very small establishments in the Mezzogiorno (see Table 21).

Nonetheless, the movement in the Ministry's figures for the Mezzogiorno doubtless gives an approximate idea of how far Group I of industry expanded, in terms of employment, in that area. The figures for June 1950 and June 1955 are shown in Table 22 (51). They indicate that Group I as a whole expanded employment by 18 per cent. This movement is very much higher than that, of only about 1.5 per cent (between the June dates), recorded for the North.

Group I thus seems to have made some strides in the Mezzogiorno — even though they are small in absolute terms. Indeed the absolute increase in employment was probably fully as high there as in the North. The most important sectors of expansion in the Mezzogiorno, in terms of absolute numbers, appear to have been mechanical engineering, and construction materials. The latter depended, it should be noted, on a local demand which was stimulated by the high public works expenditures of the period.

It would appear then that, of the small increase in employment which took place in

(51) The June figures instead of the annual averages have been used here because the employment figures are not available on a regional basis for all months of the year 1950. The June-to-June increases for the whole country are slightly higher than those resulting from the annual averages.

TABLE 21

CENSUS FIGURES FOR INDUSTRIAL EMPLOYMENT IN MEZZOGIORNO, NOVEMBER, 1951

	Employees in Mezzogiorno (Thousands)	Ratio to Total Employees in all Italy (1) (per cent)	Per cent of employees working in small units (2)
Group I			
A. Mining	48.7	41.0	14.0
B. Manufacturing:			
1. Textiles	23.5	3.9	30.9
2. Paper and paper-working	4.6	7.3	17.2
3. Printing and publishing	7.6	10.2	51.0
4. Leather and skins	5.0	12.9	65.4
5. Rubber	.7	1.8	75.3
6. Chemicals	13.8	9.3	25.3
7. Petroleum and coal derivates	3.3	17.4	4.1
8. Cellulose, and artificial and synthetic fibres, for textiles	.9	2.7	—
9. Non-metalliferous minerals	36.4	17.6	40.2
10. Metallurgical	10.1	7.0	0.9
11. Engineering I	30.9	4.6	15.0
Total B	138.6	6.6	28.3
C. Electricity	14.2	21.1	25.1
Total Group I	201.5	8.9	24.7
Group II			
B. Manufacturing:			
1. Food and allied	139.2	38.7	65.6
2. Tobacco	24.7	47.1	3.4
3. Clothing and furnishings	113.8	27.7	94.1
4. Wood, furniture, etc.	78.3	26.7	82.3
5. Engineering II	53.7	23.6	90.0
6. Photo-phono-cinematogr.	2.4	21.5	99.4
7. Miscellaneous manufactures	2.2	4.0	47.4
Total B	414.2	29.4	76.2
C. Water	4.7	39.6	42.4
Gas	1.8	12.7	1.8
D. Construction	111.5	21.0	15.6
Total Group II	532.2	27.1	63.4
Total Groups I and II	733.7	17.3	52.9
Total Groups I and II (excl. construction)	622.2	16.8	59.3

(1) Denominator taken from column 1, Table 8 above.
(2) Cf. footnote 2, Table 8 above.

TABLE 22

INDUSTRIAL EMPLOYMENT (WORKERS), IN GROUP I OF INDUSTRY, IN MEZZOGIORNO
(Ministry of Labour Figures) (1)

	June 1950	June 1955
	(Thousands)	
Group I		
A. Mining	31.3	28.1
B. Manufacturing:		
Textiles	13.9	14.5
Paper	2.4	2.8
Printing	1.9	2.8
Leather	1.0	1.1
Rubber	0.3	0.2
Chemicals	9.6	10.9
Non-metalliferous minerals	10.6	16.8
Metallurgical	4.4	8.4
Engineering	25.6	34.2
C. Electricity	6.7	7.5
Total	107.8	127.3
Total Group I for all Italy	1,569.5	1,610.2

(1) June figures instead of annual averages have been used here, owing to lack of availability of regional figures for all months in 1950.

Group I over the country as a whole, the Mezzogiorno obtained at least as large an absolute share as the North. And the conclusion might be drawn that it was the failure of Group I appreciably to expand employment at all, rather than any special reluctance vis-a-vis the Mezzogiorno, that was responsible for the slow progress towards « industrialisation » of that region — if industrialisation is interpreted in the sense of the development of the industries of Group I.

How far « industrialisation » proceeded in the sense of the expansion of those small-scale manufacturing industries which have been much more typical of the Mezzogiorno in the past — the food trades, clothing, wood and furniture — is not, of course, reliably documented by the Ministry of Labour statistics. The same reasons as were set out in earlier sections of this article make it seem likely, however, that these manufacturing industries (of Group II, that is), along with construction, transport and commerce, took off the brunt of the labour pressure.

10. Summary of Conclusions.

From among the conclusions, some of them tentative in character, that may be drawn from the analysis of the development of income and employment during the period 1950 to 1955, the following seem to merit particular attention.

1. A high rate of gross investment, estimated as amounting annually to between 20 and 23 per cent of the gross national product, supplemented by the bringing into operation of reserves of unused capacity, failed to draw into employment an additional number of workers large enough perceptibly to reduce the volume of unemployment. Even allowing for some swelling of the lists of the unemployed by increased registrations from the « under-employed » who were desirous of obtaining fuller employment and more adequate incomes, it appears that the period ended more or less as it began with between 1.5 and 2 million unemployed.

2. A very rough indirect estimate — it is not much more than a guess — would indicate that total employment in agricultural and non-agricultural activities combined may have expanded by some 700 to 800 thousand persons. Assuming that the total employed labour force at the beginning of the period was in the neighbourhood of 18 millions (52) — though this is again only a very rough figure — the increase in employment would be less than 5 per cent.

If this figure is anywhere near the truth, it means that the percentage increase in employment over the five years hardly exceeded

(52) The « active » population, or population of 10 years and above claiming to exercise a trade or profession, registered by the Census of 4th November, 1951 was 19,659,000 (provisional figure). This included the unemployed, other than those in search of their first job.

that which took place during the same period in some « full employment » economies.

3. The experience of the period thus strongly suggests that the continuation in the future of high rates of income growth and of investment will not, by itself, be an adequate guarantee of a sufficiently rapid solution of the unemployment problem. It is essential besides that the investment process should take the appropriate direction.

4. Between the beginning and the end of the period under review, housing, public works, and land improvement, of which the effect in increasing productive capacity is slight or else long-delayed, absorbed an increasing proportion of the total gross fixed capital formation; while industry absorbed a declining proportion. Nonetheless investment in the industrial sector probably brought the 1955 figure for gross fixed industrial capital formation to some 30 per cent in real terms above the 1950 level. A large part of this additional industrial capital must have gone into what was called above « Group I » of industry.

5. Group I — covering such important sectors as textiles, engineering, metallurgy, chemicals, and construction materials — employed some 2.3 million persons at the Census date (November 1951) thereby accounting for rather more than half of total industrial employment. This industry-group is predominantly one of medium- and large-scale units of production; and, over the major part of it, levels of remuneration of labour are governed by collective wage contracts and are protected by the sliding scale.

It is the best documented part of the Italian economy as regards movements in employment, output, and earnings.

6. Although output in Group I expanded by over 60 per cent between 1950 and 1955, the group absorbed only a very small increase in employment — about 2 per cent. In absolute terms the number of additional employees (workers plus other grades) was probably no more than 40,000. Average hours worked per man increased, in response to the elimination of short time in some cases and to the working of over-time in others; but even so the rise in the total number of man-hours worked was only about 4 per cent. The increase in average productivity per man-hour in Group I of industry was consequently high: of the order of 57 per cent in the space of five years.

7. Evidently, then, the additional investment in Group I of industry served primarily to increase the « capital-depth », and the average productivity per head, of a constant occupied labour force, and only in a very limited degree to broaden the employment base. The increase in « capital-depth » was due partly to increased mechanisation, but partly also to the faster expansion of the more capital-intensive sectors as compared with the less capital-intensive ones.

8. Given the smallness of the addition to employment in Group I over the country as a whole it is not very surprising that the progress made in this group in the Mezzogiorno was also slight. Indeed, the Mezzogiorno appears to have obtained a comparatively high share of the total gain.

9. The movement towards increasing « capital-depth », part of which was due to technological factors, to the exploitation of new resources, and to changes in demand, was enhanced by rising wage costs. Money wage costs in Group I of industry rose by about 36 per cent. The price-level of the output of the group rose by perhaps 3 per cent — although in the absence of a truly representative group price index, this figure must be regarded as very rough. It would imply that *real* labour costs — measured in terms of the output of Group I — increased by some 32 per cent.

10. It thus appears that only between one half and two-thirds of the growth in productivity in Group I was absorbed by wages. There are a number of reasons why no reli-

able inference can be drawn, from this calculation, concerning the movement in profit rates. Nevertheless, it is likely that certain monopolistic positions in Group I yielded high, and perhaps growing rates of profit during the period.

11. Comparable to Group I of industry as regards wage levels and movements is part of Group II (i.e. construction and some smaller sectors), and transport. These branches are again predominantly in the hands of medium- or large-scale units to which it may be presumed that collective wage contracts apply. No direct information is available concerning the number of additional employees that were absorbed by these activities; but indirect evidence suggests that construction and transport absorbed several hundreds of thousands.

12. These branches of activity along with Group I of industry belong by virtue of their average income levels — both wages and profits — to an upper layer of the non-agricultural part of the Italian economy.

13. From it may be distinguished a second layer which, though part of it doubtless enjoys income levels comparable with those of the first layer, is as a whole almost certainly characterised by lower average earnings per head as well as by less uniform earnings. To this second layer — which is far less well documented statistically than is the first — belong the larger part of Group II of industry along with commerce. The relevant part of Group II of industry includes the food, clothing, and wood and furniture sectors, and the small engineering shops doing repair and odd-job work. Aside from isolated instances of large producing units, it consists of very-small scale, highly competitive, and usually labour-intensive industry. It contains substantial numbers of self-employed (artisans) and family associates, who draw their income in the form of profits rather than of contractual wages; and a large proportion even of the wage-earners are working in firms too tiny to come under the discipline of collective wage contracts. Similarly situated is most of commerce.

Into this zone at present falls by far the greater part of the industry of the Mezzogiorno.

14. It is impossible to establish with any certainty what movements took place in output, employment, and earnings in this second layer. Quite probably, however, it absorbed during the five year period substantial numbers of additional employees, many of them at very low income levels. A large part of this layer probably remains a zone of « underemployment », low productivity, and low earnings, hardly distinguishable at the fringes from the lowest layer of all — that of unemployment in the strictest sense. Many of its members are likely, moreover, to be registered as unemployed at the Labour Exchanges.

15. It is in order to relieve pressure on the middle and lower layers that the upper layer would need to expand more rapidly. The pivot of the upper layer is, however, Group I of industry; and the small labour-absorption power of this group stands out — it may be repeated — as one of the striking features of the period.

16. In agriculture, increased mechanisation, the more extensive use of fertilisers, and other improvements in methods, were reflected in an upward trend in output. Other advances made during the period — particularly in the field of land reclamation — must be expected to show their full results in raising agricultural income only at a much later date. The low level of productivity and earnings at present prevailing among a large section of the existing agricultural population leads, however, to the view that agriculture must be expected to release, rather than absorb man-power in any development process which is aimed at eradicating the extremes of poverty.

17. Our sketch of what happened to employment and incomes during the recent past

— even if it is partly based on conjecture — focusses attention on the hard terms of the choice which faces the Italian economy in the future. Three alternative types of development process are in principle possible.

The *first* is a process which aims predominantly at development *in depth* of the « upper layer » of the economy, and which allows living standards in that layer to continue improving at a rate comparable with that of recent years, and comparable with that which can be afforded in countries which have already reached full employment. This process would, however, be bought at the cost of prolonging the disparity between a narrow « upper layer » and a wide, or perhaps widening « lower layer », in which a large part of the total labour force remained either completely outside the productive system, or else on the fringes where earnings are extremely low.

18. The *second* process is one which conduces more largely to development *in breadth* of the « upper layer », thus relieving the pressure of the labour supply on the « lower layers ». This implies: (a) a policy of « profit restraint » on the part of business in those sectors where technical conditions inevitably impose a few large business units capable of exercising monopoly power; and (b) a policy of « wage restraint » on the part of organised labour, until such time as a level of employment not far short of full has been reached.

« Profit restraint », implying less monopolistic price policies in the relevant sectors, would help speed up the expansion of Group I of industry, especially by making its products more competitive in export markets. « Wage restraint », during the period of transition from an under-employment to a full employment economy, besides affecting the general level of costs, would influence the cost *structure* of Group I of industry, and hence the pattern of future expansion within that group. It would, that is to say, lead to a heavier concentration in the sectors of relatively low capital-intensity, thus causing the available capital resources to be spread over a larger employment base (53).

In particular, it is probable that a slowing down in the rate of increase in wage costs would help to accelerate the rate of expansion or slacken the rate of contraction respectively, in the two industries, engineering and textiles, which have traditionally been Italy's major manufacturing branches, and (along with agriculture) her most important export sectors.

19. The events of recent years also call attention to certain limits on the width of the margin within which a policy of wage restraint can operate, under the condition that the principle of the « sliding scale » should not be infringed, and given the heavy weight, at the present stage of Italy's economic development, of food expenditure in the average worker's budget.

The change between 1950 and 1955 in the « terms of trade » between foodstuffs and industrial goods meant that the rise in the cost of living appreciably exceeded that in the price level of the output of Group I of industry. Hence even if the real wages of the workers in that group had remained constant in terms of the goods they *consumed*, they would still have risen quite substantially in terms of those they *produced*.

While some of the factors which were responsible for this situation are likely to be weaker in the future than they were in the recent past, it is important to recognize, over the longer run, that the tie-up between wages and the cost of living means that food prices have for all practical purposes become a direct cost of industry. It follows that industrial expansion and agricultural protection are to

(53) It may be noted that this is quite a different point from that which is sometimes raised in current discussions, and which looks to some form of « wage restraint » as a means of limiting the growth of consumption in the interests of an intensified investment programme. The point raised in the text above would clearly not be met by a scheme under which wage rates, and therefore industrial wage costs, continued rising at the same pace as before, but workers henceforth received the increase (or part thereof) in the form of some kind of « savings certificate ». For, though such a scheme might possibly serve the purpose of inducing additional saving, it would certainly not serve that of influencing the cost-structure in the direction indicated.

a certain extent mutually exclusive aims. Agricultural protection, were it to be pursued, might constitute for industry as a whole a limiting factor similar to that which steel protection once implied for the engineering sector.

20. The *third* type of development process, which is one that would permit rapid strides to be made in both directions at once — i.e. *both* in raising incomes per head of those already in the « upper layer » of the economy *and* in raising levels of income and employment among those at present in the « lower layers » — would require a much vaster investment programme than that which is at present contemplated as being within the realm of practical possibilities.

21. While the above considerations call attention to certain characteristics of the cost and price structure which would be an essential part of the mechanism driving the development process in the particular direction at which the « Vanoni Plan » is aimed, they do not signify that the Plan's broad objectives of narrowing the present wide disparities in income levels between economic groups and geographical regions, and of making the transition to something approaching a full employment economy, within say the next ten years, are impossible of realisation. Our considerations are, that is to say, essentially variations on the original theme rather than a new one.

VERA C. LUTZ

Industrial Production in Western Europe and the United States 1901 to 1955

CHAPTER I. *Definitions and methods of calculation.*

CHAPTER II. *The volume of industrial production in the countries of Europe, in Western Europe as a whole, and in the United States, between 1901 and 1955.*

CHAPTER III. *Development of industrial production between 1901 and 1955* - 1. *Development of industrial production in Western Europe* - 2. *Comparative development of industrial production in the individual countries of Europe* - 3. *Development of industrial production in the United States* - 4. *Long-term trends of industrial production in the United States and in Western Europe* - 5. *The impact of the Wars on European industrial production.*

CHAPTER IV. *Structure of production in manufacturing industries* - 1. *Structure of production in manufacturing industries in Western Europe and the United States* - 2. *Structure of production in manufacturing industries in the major European countries: (a) Food, beverage and tobacco manufacturing industries; (b) Textile industries; (c) Basic metal industries; (d) Metal products industries; (e) Chemical industries, including by-products of petroleum and coal.*

CHAPTER V. *Volume and trend of industrial product per head* - 1. *Population trends* - 2. *Industrial product per head in 1955* - 3. *Development of industrial product per head between 1901 and and 1955: (a) Development of industrial product per head in Western Europe; (b) Development of industrial product per head in Western Europe and the United States.*

ANNEX 1. *Calculation of the indices and comparison of volumes of industrial production.*

ANNEX 2. *Production in 1955 of selected industrial products in Western Europe and in the United States.*

ANNEX 3. *Indices of industrial production in manufacturing industries: (a) Total manufacturing industries; (b) Food, beverage and tobacco industries; (c) Textile industries; (d) Basic metal industries; (e) Metal products industries; (f) Chemical industries, including by-products of petroleum and coal.*

* * *

The present study is based on statistical data systematically compiled in order to facilitate international comparisons; its aim is to calculate the levels of industrial production in Western Europe as a whole, in the major countries of that area and in the United States, to compare those levels, to analyse the trends and to examine the structure of industry in the different countries.

The study covers the period 1901-1955. If 1901 has been chosen as point of departure, it is not only because a recent O.E.E.C. publication « Industrial Statistics 1901-1955 » provided a great number of series so established as to facilitate international comparisons. It is also because world industrial expansion, after slowing down somewhat at the end of the 19th century, picked up again more keenly and more generally at the beginning of the 20th, and on lines sufficiently different from the earlier period to suggest that with the 20th century a second industrial revolution began.

In this study care has been taken not to seek out the causes which have influenced or determined the facts or to judge the various economic policies with which they are associated.

Chapter I

DEFINITIONS AND METHODS OF CALCULATION

Definitions.

In the present study, the phrase « *Western Europe* » covers all the European territories of the countries which in 1955 were Members of the Organisation for European Economic Cooperation, i.e., Austria, Belgium, Denmark, France, the Saar, the Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Luxemburg, Norway, the Netherlands, Portugal, Sweden, Switzerland, Turkey and the United Kingdom.

This definition of Western Europe does not coincide with « geographical » Western Europe. It excludes Spain, Finland, and Yugoslavia. Nevertheless, although the alterations which could be made in the definition of Western Europe by including these three countries would change certain data (area, population, etc.) they would not affect the characteristics and development of industrial production that are the object of the present study.

« *Industrial production* » is defined as production resulting from the following three activities: mining and quarrying, manufacturing, production of electricity and gas. This definition excludes construction (1).

Western Europe and Industry. The eighteen countries comprising Western Europe so defined cover an area of 3.5 million square kilometres, with a total population of 284 million at the end of 1955.

These various countries are far from having the same degree of development: side by side with countries among the most highly industrialised in the world are others which, in certain respects, might be grouped with the underdeveloped areas. Western Europe today takes second place in the world for total volume of industrial production, after the United States, but in front of the U.S.S.R.

Taking the eighteen countries as a whole, industrial production in 1955 accounted for 42% of the formation of gross national product, while construction contributed 7%, agriculture 13% and the other activities (« Tertiary ») 38%.

Calculation of the index of industrial production.

In order to determine the volume of industrial production in Western Europe and to study its development during the first half of the 20th century it is necessary to calculate an index of industrial production covering the whole of the region studied.

The direct method would be to note the quantities of each article produced in Western Europe since 1900 and to establish an index for each. The index of industrial production in Western Europe would then be obtained by weighting each of these elementary indices according to the relative importance of each product in total industrial production during the year chosen as a base. Actually, sufficiently long series on industrial production are available for only a very limited number of products, and there are no elements on which to base a weighting. Such a method is therefore impracticable.

Consequently the index of industrial production in Western Europe has had to be calculated by another method. We have combined the national indices of industrial production of the various countries, each national index being given a « weight » corresponding to the importance of the country concerned in the industrial production of Western Europe during the selected reference year.

(1) The activities mentioned are themselves defined in the International Standard Industrial Classification (I.S.I.C.). (Cf. Annex 1).

To calculate the European index of industrial production using the method just described, two groups of data are needed:

1. A series of indices giving, for each country, the development of the volume of industrial production during the period considered, i.e. 1901-1955.

2. An evaluation of the relative importance of each country's industrial production at a specific time, in order to determine the weighting of the European index.

(A) THEORETICAL DIFFICULTIES.

To calculate the index of industrial production in Europe thus requires comparisons over time (inside each country) and over space (between countries) of volumes of production. Such comparisons present fundamental difficulties which must be stressed. It is important fully to realise that there are several solutions to the problem of measuring the relative magnitude of industrial production in two countries, or in a single country at two different times. This lack of uniformity results essentially from the differences in price structure (2) peculiar to each country or each period.

Industrial production consists of a multitude of very diverse products which it would be meaningless to add together quantitatively. To total these products, their monetary value must be brought in. If the structure of prices were uniform and unvarying — if, in other words, price relationships between products were the same everywhere and always — there would be no problem in using monetary values. The value of industrial production would then be homogeneous at different times or in different countries, and comparisons would lead to clearly defined results. But in fact, price structures vary considerably according to the countries and periods considered; each value of total industrial production can be expressed according to various price systems, the relationships between the values allotted to each country and each period then depending on the price system chosen.

Furthermore, an index covering a very long period cannot be devised in a field such as overall industrial production without questioning its very concept, since the pattern of industrial production has undergone a profound change in the course of time: the quality of products has changed, some have disappeared, others have been created, and price relationships between products have been completely changed.

The establishment of a historical series of indices of industrial production is thus to some extent arbitrary. The indices can be expected to give some indication of the relative magnitude of development, but no absolute value can be attached to the data.

(B) METHOD OF COMPUTATION.

Country indices. The series of country indices of industrial production used in this study are based on official or private indices available in the various countries (3).

Each of these series was prepared in such a way that:

(a) The coverage corresponds as closely as possible to the definition of industrial production adopted;

(b) The data refer, for all years, to production on the 1955 territory of the country concerned;

(c) The internal weighting of the indices for all countries refers to the same period — that chosen as international weighting base period — all national indices of industrial production have therefore been recomputed using weights giving each sector of industry the relative importance it had in 1938 in the country under review.

This method of establishing the data ensures the greatest possible comparability through time and space of the country indices.

(2) In the computation of industrial production indices, « price » means « value added per unit ».

(3) The list of all sources used is given in the volume « Industrial Statistics 1901-1955 », p. 153 and ff. (O.E.E.C., Paris 1956).

European Index. The index of industrial production in Western Europe was obtained by combining the country indices using weights corresponding to each country's share in European industrial production in 1938. These shares were computed by comparing the value added in United States dollars of each country's industrial production with the total value of industrial production in Western Europe.

The values added in industrial production were computed twice, first for 1938, then for 1950, using independent data. The results obtained, when applied to the same year, are practically equivalent (4).

The results obtained were compared with those which appear from a study of quantitative factors linked to industrial production in each country: energy consumption, steel consumption and manpower employed in industry. These comparisons confirmed the validity of the figures obtained.

TABLE 1

SHARE OF EACH COUNTRY IN THE INDUSTRIAL PRODUCTION OF WESTERN EUROPE

	1955
Western Europe	100
United Kingdom	30
Germany	23.5
France	14.0
Italy	9.0
Belgium-Luxemburg	4.5
Sweden	3.9
Netherlands	3.6
Switzerland	2.8
Austria	2.2
Denmark	1.4
Norway	1.3
Turkey	1.0
Portugal	1.0
Greece	0.8
Ireland	0.6
Saar	0.4

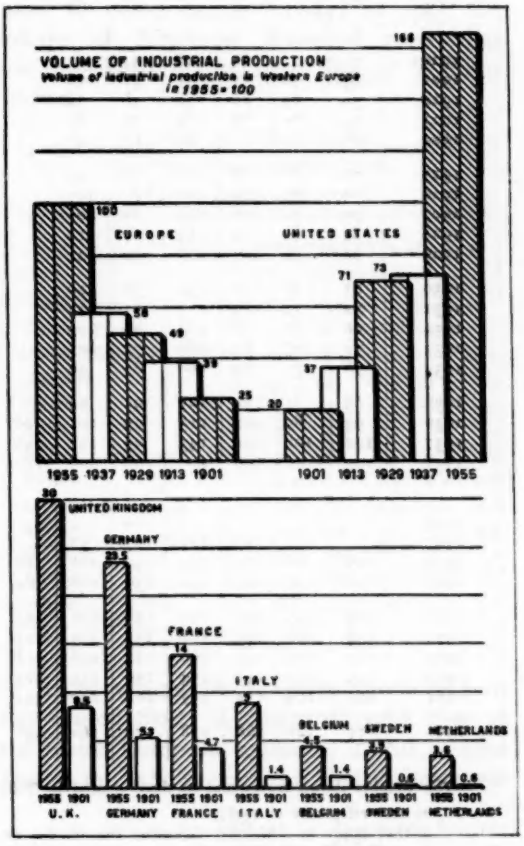
(4) A detailed account of the methods used is given in Annex 1.

Share of each country in the industrial production of Europe. On the basis of the above-mentioned computations, the share of each country in European industrial production was in 1955 as shown in table 1.

Using the same methods, it was calculated that the volume of industrial production in the United States was two-thirds higher than in Western Europe in 1955.

Western Europe	100
United States	166

Indices 1901-1955. Table 2 gives the indices of industrial production of Western Europe, the European countries and the United States for the period 1901-1955.



Graph I

GENERAL INDICES OF INDUSTRIAL PRODUCTION

TABLA 2

(1938 = 100)

	Member Countries combined	O. E. E. C. Member Countries															United States
		Austria	B. L. E. U.		Denmark	France & Saar		Germany	Greece	Ireland	Italy	Netherlands	Norway	Sweden	Turkey	United Kingdom	
			Belgium	Luxemburg		France	Saar										
Weight in combined index	100.0	1.92	3.79	0.19	1.55	15.12	0.54	26.11	0.84	0.62	8.58	3.19	1.05	3.69	0.72	32.09	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
																	(a)
1901	44		52	41		54		38			31		34			50	35
1902	46		56	46		56		40			32		34			51	39
1903	46		54	51		57		40			35		35			51	41
1904	48		58	54		59		43			35		34			50	39
1905	50		60	58		60		45			38		35			54	47
1906	53		63	64		64		49			43		37			55	50
1907	55		64	65		68		52			49		39			56	51
1908	54		63	58		68		50			52		41			52	43
1909	56		66	63		71		52			50		42			56	51
1910	58		69	69		76		54			50		46			57	56
1911	62		72	71		80		60			53		48			60	54
1912	66		76	83		86		64			57		54			63	61
1913	69		77	96	39	89		66			57		57	44		68	66
1920	55		60	48	54	61		39			52		62	42		68	84
1921	49	56	55	51	41	58		48			50		49	31		46	68
1922	59	69	66	78	46	74		52			58		57	37		60	81
1923	59	69	73	73	58	80		35			63		61	41		68	99
1924	68	74	82	98	63	96		51			70		65	47		70	92
1925	71	86	82	109	66	97		60	62		77		70	48		69	101
1926	70	85	87	120	64	107		58	57	68	81	65	63	52		59	109
1927	79	92	96	133	62	102		72	64	69	78	71	65	55		75	106
1928	83	99	104	139	67	114		76	66	70	87	77	72	57		74	111
1929	86	99	107	150	72	121		76	67	72	88	82	77	65		79	124
1930	81	90	100	131	78	120		65	67	72	82	89	79	66		74	103
1931	72	77	89	113	73	104		55	68	73	74	83	63	63		68	85
1932	66	65	78	102	68	90		45	61	75	68	77	71	58		70	68
1933	72	67	82	102	77	101		52	68	81	73	74	72	61		75	78
1934	78	74	84	108	85	96		63	76	87	75	76	75	72		83	85
1935	85	81	94	107	91	94		73	89	92	87	78	83	81		90	98
1936	93	89	102	113	95	101	88	83	84	100	87	82	91	89		99	116
1937	102	100	111	143	99	108	96	93	94	102	101	91	100	99		107	127
1938	100	(100)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1946	..	..	..	..	104	..	..	..	54	108	..	..	104	136	146	110	192
1947	..	..	112	103	117	92	..	..	68	116	..	..	120	139	155	118	214
1948	101	92	121	137	130	108	68	52	75	127	102	114	133	150	161	127	219
1949	114	123	124	130	139	118	84	75	89	144	109	128	146	156	178	135	204
1950	127	145	128	137	154	121	92	94	112	163	126	145	164	163	179	145	234
1951	139	166	147	168	157	134	113	112	128	170	144	151	175	170	195	152	252
1952	141	167	143	168	152	138	118	120	128	168	150	154	176	168	211	148	259
1953	149	170	143	154	156	135	115	130	146	181	165	169	185	170	233	157	281
1954	162	194	154	157	168	147	124	146	178	188	181	188	197	178	253	169	262
1955	177	220	168	178	170	160	136	170	189	199	196	202	205	187	288	179	291

The weights shown correspond to those quoted in Table 1 for 1955 but:

1) they refer here to 1938;

2) they apply to « Member Countries combined » excluding the three countries (Portugal, Switzerland, Iceland) for which there are no indices of industrial production.

Notes: (a) Electricity, gas and water are not included.

Chapter II

THE VOLUME OF INDUSTRIAL PRODUCTION IN THE COUNTRIES OF EUROPE, IN WESTERN EUROPE AS A WHOLE AND IN THE UNITED STATES, BETWEEN 1901 AND 1955

Table 1 above showed the volume of industrial production in each European country and in the United States in 1955 as a percentage of total industrial production in Western Europe.

On the basis of these data and of the indices of industrial production given in Table 2, which show the fluctuations in production over a period of time, it is possible to work out the comparative volumes of industrial production for each year from 1901 to 1955.

In Table 3 the volume of each country's industrial production for each year is expressed as a percentage of the total volume of industrial production in Western Europe in 1955, taken as an international unit. The figures refer to 1901, 1913, 1929, 1937 and 1955. Each of these years, as we shall see in the following paragraphs, represents one of a series of successive « peaks » in the expansion of industrial production in the western world. Countries have been arranged in the order of their importance in 1955.

The first two lines of Table 3 compare the volume of production in the United States and in Western Europe during the first half of the 20th century. Before the First World War, European industrial production exceeded that of the United States: by more than 25% in 1901 and by 5% in 1913. During the First World War the positions were reversed, United States industrial production overtaking that of Europe: in 1920, two years after the end of the War, the lead amounted to 50% and in 1929 to about 44%. Between 1929 and 1937 Western Europe regained some of the ground lost to the United States, harder hit by the Depression (5), and in 1937 United States industrial production exceeded that of Western Europe by only one-quarter. The United States again considerably increased its lead during the Second World War, the volume of industrial production in that country being more than twice (220%) that in Western Europe in 1948. Between 1948 and 1955 the great industrial drive in Europe enabled the latter to make up some of the leeway: in 1955 the volume of American industrial production was two-thirds higher than that of Western Europe.

TRENDS IN THE VOLUME OF INDUSTRIAL PRODUCTION (Western Europe 1955 = 100) — Table 3

	1955	1937	1929	1913	1901
United States	166	73.5	71	37.5	20
Western Europe	100	58	49	39	25
United Kingdom	30	18	13.5	11.5	8.5
Germany	23.5	13	10.5	9.2	5.3
France	14.0	9.3	10.5	7.7	4.7
Italy	9.0	4.6	4.0	2.6	1.4
Belgium-Luxemburg	4.5	3.1	2.9	2.1	1.4
Sweden	3.9	2.1	1.4	0.9	0.6
Netherlands	3.6	1.6	1.4	1.0	0.6
Austria	2.2	1.0	1.0	0.8	0.5
Denmark	1.4	0.8	0.6	0.3	0.2
Norway	1.3	0.6	0.5	0.4	0.2
Others	6.6	3.9	2.7	2.4	1.6

If the volume of industrial production in the United States is compared with that in the major European countries, it will be seen that as far back as 1901 the United States was

(5) In 1932, at the depth of the Depression, European production again equalled American production, as it also did in 1938.

the world's greatest industrial power. Its production at that date was more than double that of Great Britain and four times that of Germany or France. Since then the gap has widened considerably: in 1955 industrial production in the United States was 5.5 times greater than in the United Kingdom, 7 times greater than in Germany, 12 times greater than in France and 18 times greater than in Italy.

The share of each European country in the industrial production of Western Europe will be seen more clearly if the volume of its production in each year under review is expressed as a percentage of the volume of industrial production in Western Europe as a whole.

TABLE 4

SHARE OF EACH COUNTRY IN THE VOLUME OF INDUSTRIAL PRODUCTION IN WESTERN EUROPE

	1955	1937	1929	1913	1901
Western Europe	100	100	100	100	100
United Kingdom	30.0	31.5	27.5	29.5	34.0
Germany	23.5	22.5	21.5	23.5	22.0
France	14.0	16.0	21.5	20.0	19.0
Italy	9.0	8.0	8.2	6.7	5.6
Belgium-Luxemburg	4.5	5.4	5.9	5.4	5.4
Sweden	3.9	3.6	2.8	2.3	2.3
Netherlands	3.6	2.7	2.9	2.6	2.4
Austria	2.2	1.7	2.0	2.1	2.0
Denmark	1.4	1.4	1.2	0.8	0.8
Norway	1.3	1.1	1.0	0.9	0.8
Others	6.6	6.1	5.5	6.0	5.5

Although its relative importance declined slightly during the period under review, the *United Kingdom* has never ceased to be the leading industrial power in Europe. In 1901 it accounted for one-third of European production. Its share gradually declined until 1929, when it represented little more than one-quarter. After 1929 the United Kingdom regained some of the ground lost: in 1937 and in 1955 its share was 30%.

The volume of industrial production in *Germany* (6) is second only to that in the United Kingdom. Germany's share in European production has not greatly varied during the years under review; it accounts for about one-quarter of total production. In the years immediately following the two world wars its relative importance declined considerably: in 1920 it accounted for not more that 17% of the industrial production of Western Europe as a whole, and in 1948 only 13%.

France's share in European industrial production increased between 1901 and 1929 (by almost 15%): in 1929, it represented more than one-fourth. But after 1929, France's share decreased: in 1937, 16% of European industrial production and, in 1955, only 14%. In 1901 French industrial production amounted to 55% of that of the United Kingdom, almost equalled that of Germany, and was 3.5 times as much as that of Italy. In 1929 France equalled Germany and produced four-fifths as much as the United Kingdom. In 1955 her contribution was less than half that of the United Kingdom, three-fifths that of Germany, and only one-and-a-half times that of Italy.

The Belgium-Luxemburg Economic Union kept its share in European industrial production almost constant (at about 5.5%) between 1901 and 1937. In 1955, its share was only 4.5%, production having increased less in Belgium than in the other European countries since 1937.

Italy, the *Netherlands* and the *Scandinavian countries*, which in 1901 were much less industrialised than the countries previously mentioned, are those which most increased their share in Western European industrial production. Together they contributed 12% in 1901, i.e. a little more than one-third of United Kingdom production, one-half of German and two-thirds of French production. In 1955 their production accounted for one-fifth of European industrial output, i.e. two-thirds of British and four-fifths of German production, which puts them well ahead of France.

(6) For all the period « Germany » means the 1955 territory of the Federal Republic.

In conclusion, the changes in the contribution of each country to European industrial production, provided that these figures are regarded as purely relative, suggest the following remarks:

(a) the countries showing the greatest increase in their share in industrial production are those which in 1901 were least industrialised and contributed least to European industrial production;

(b) between 1901 and 1929 the share taken by the individual countries in European industrial production underwent a change, as though all the relative progress made by those countries had been at the expense of the United Kingdom's share. On the other hand, between 1929 and 1955, the breakdown further changed, in such a way that all the relative progress made — including the British recovery — seemed to have been at the expense of France. Over the whole period 1901-1955 only one great power, France, suffered a considerable decline in its share in European industrial production.

Chapter III

DEVELOPMENT OF INDUSTRIAL PRODUCTION BETWEEN 1901 AND 1955

1. Development of Industrial Production in Western Europe.

Between 1901 and 1955, the volume of European industrial production increased fourfold; it doubled first between 1901 and 1929, and again between 1929 and 1955.

Table 5

INDICES OF INDUSTRIAL PRODUCTION IN WESTERN EUROPE (7)
(1938 = 100)

1901	44	1932	66
1907	55	1937	102
1908	54	1938	100
1913	69	1948	101
1920	55	1951	139
1921	49	1952	141
1929	86	1955	177

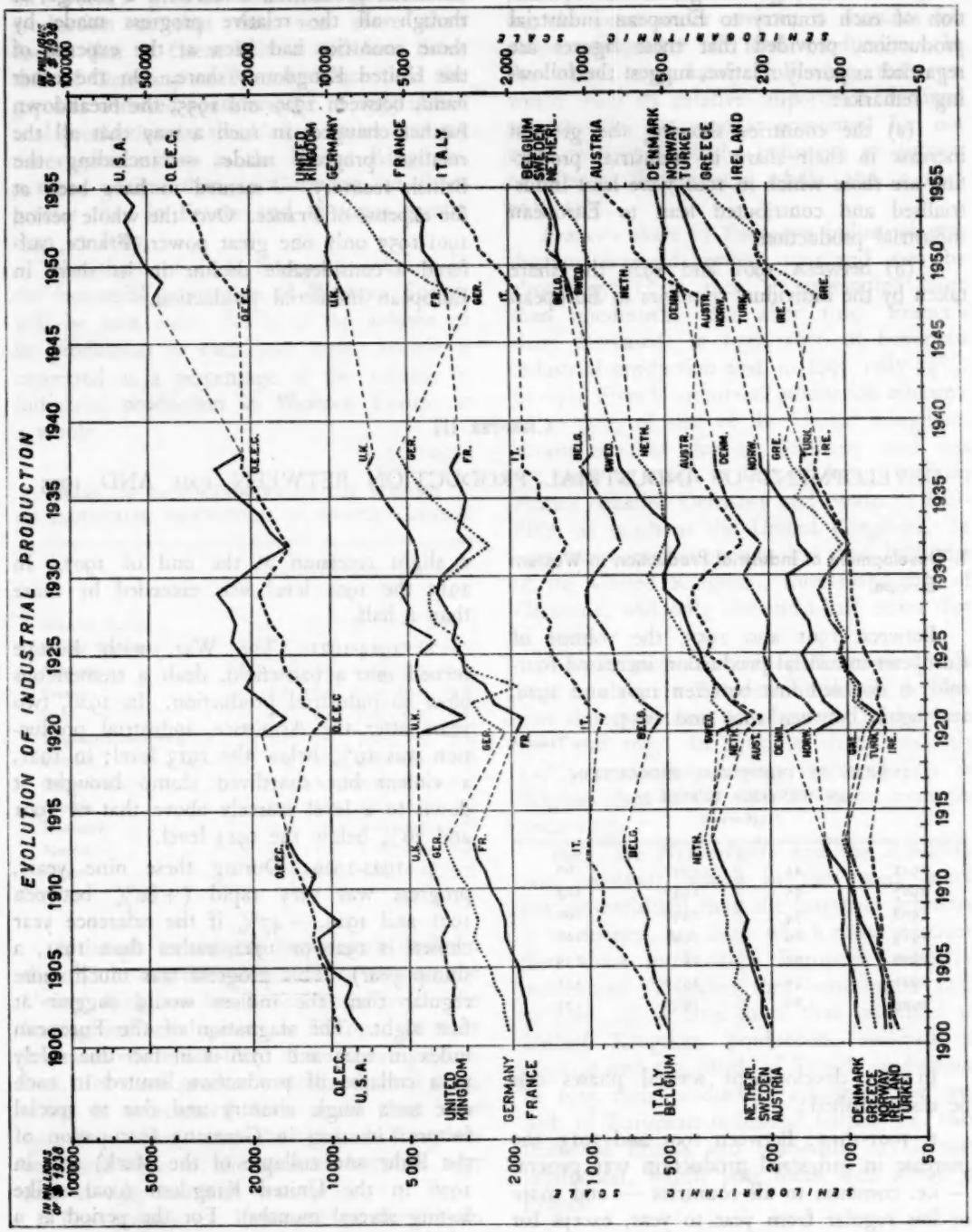
In this development several phases can be distinguished:

1. 1901-1913: Between 1901 and 1913, the increase in industrial production was general — i.e. common to all countries — and more or less regular from year to year, except for a slight recession at the end of 1907. In 1913 the 1901 level was exceeded by more than a half.

2. 1914-1921: The War, with Europe turned into a battlefield, dealt a tremendous blow to industrial production. In 1920, two years after the Armistice, industrial production was 19% below the 1913 level; in 1921, a violent but shortlived slump brought it down to a level scarcely above that of 1901 and 30% below the 1913 level.

3. 1921-1929: During these nine years, progress was very rapid (+80% between 1921 and 1929, +47% if the reference year chosen is 1920 or 1922, rather than 1921, a slump year). This progress was much more regular than the indices would suggest at first sight. The stagnation of the European index in 1923 and 1926 is in fact due solely to a collapse of production limited in each case to a single country and due to special factors: in 1923 in Germany (occupation of the Ruhr and collapse of the Mark) and in 1926 in the United Kingdom (coal strike lasting several months). For the period as a whole, the expansion is particularly marked in Belgium and France, weaker in the United

(7) The complete indices for all years are given in Table 2.


EVOLUTION OF INDUSTRIAL PRODUCTION
SEMILOGARITHMIC SCALE
IN MILLIARDS OF $ 1938
100000
50000
20000
10000
5000
2000
1000
500
200
100
50
1900
1905
1910
1915
1920
1925
1930
1935
1940
1945
1950
1955
U.S.A.
O.E.E.C.
UNITED KINGDOM
GERMANY
FRANCE
ITALY
BELGIUM SWEDEN NETHERL.
AUSTRIA
DENMARK NORWAY TURKEI
GREECE
IRELAND
U.K.
GER.
FR.
IT.
BELG.
SWED.
NETH.
AUSTR.
DENM.
NORW.
TURK.
GRE.
IRE.

Graph II

Kingdom. In 1929, European industrial production was twice that of 1901 and 26% above the 1913 level which had been overtaken in 1924.

4. 1930-1932: At the end of 1929 the United States set off a world-wide slump that was to be exceptionally farreaching and exceptionally long-lived. It affected all the countries of Europe. Industrial production collapsed. In 1932, at the depth of the depression, it stood at a level appreciably the same as in 1913, i.e. three-quarters that of 1929.

5. 1933-1938: The recovery was general, though weaker in France and Belgium than in the other countries. Europe regained the 1929 level in 1935 and exceeded it by 18% in 1937, when European industrial production reached its pre-war maximum. A new recession hit most countries in 1938, causing the European index to fall by 2%.

6. 1939-1947: For the second time in twenty-five years, war swept over Europe, and in 1944 industrial production was very limited in almost all countries.

7. 1948-1955: European industrial production overtook the 1937 level in 1948 and ever since — except for a period of stagnation in 1952 — has been increasing at a rapid and regular pace. The expansion is general. In 1955 the volume of industrial production was four times that of 1901, twice that of 1929 and three-quarters above the 1937 level.

2. Comparative Development of Industrial Production in the Individual Countries of Europe.

The development of industrial production in Western Europe is the sum of developments in each of the European countries. National developments do not show any fundamental divergencies: it is rare to find countries which, during a given period, « go against the current » of the general movement. Nevertheless, though the developments all follow the same direction, their proportions differ considerably.

UNITED KINGDOM

TABLE 6

INDICES OF INDUSTRIAL PRODUCTION IN THE UNITED KINGDOM AND THE REST OF WESTERN EUROPE

(1938 = 100)

	United Kingdom	Rest of Western Europe	Total Western Europe
1901	50	42	44
1913	68	70	69
1920	68	50	55
1921	46	50	48
1925	69	73	71
1926	59	76	70
1929	79	91	86
1931	68	75	72
1932	70	65	66
1937	107	100	102
1946	110	n.a.	n.a.
1948	127	90	101
1955	179	176	177

Between 1901 and 1913 the United Kingdom made less progress than the rest of Europe, industrial production increasing by only 36% while that of the rest of Western Europe increased by 66%.

After the First World War, industrial production in the United Kingdom in 1920 equalled that for 1913, while the rest of Europe showed a drop of 29%. But in 1921 the United Kingdom was the only country in Europe to be seriously affected by the slump, industrial production falling by one-third between 1920 and 1921. Industrial production made but slow progress in the years which followed: in 1925 it hardly exceeded the 1913 level; in 1926 the coal strike paralysed many industries for several months and production dropped by 15%; in 1929, industrial production in the United Kingdom exceeded the 1913 level by only 17% while the rest of Europe was 30% above (8).

(8) The drop in production following the world slump was less marked in the United Kingdom (−14%) than in the rest of Europe (−28%), the explanation being that the United Kingdom had been in a continual state of depression since 1921. The deflationary policy pursued since the Armistice to restore sterling to its pre-war value (achieved in 1925) hampered the expansion of industrial production.

After the devaluation in 1931, the situation changed: while European production continued to fall during 1932 (— 12%), United Kingdom production increased by 2%. From 1932 to 1937, the United Kingdom's industrial production progressed by 53%, as much as the rest of Europe. In 1937 industrial production in the United Kingdom exceeded the 1929 level by 34%, the increase for the rest of Europe being only 10%. The 1937 level represented an advance of 58% over 1913, against 44% for the rest of Europe.

At the end of the Second World War, the level of industrial production in the United Kingdom was relatively high compared with that in the other countries. In 1946 it was 2% higher than in 1937, and in 1948 surpassed this level by one-fifth, the rest of Europe being still 10% below it. There was some levelling-out in the years which followed, the other countries making up lost ground: while industrial production in the United Kingdom increased by 41% from 1948 to 1955, in the rest of Europe it doubled. Compared with 1937, the level reached by the United Kingdom in 1955 (+65%) was lower than that attained by the rest of Western Europe (+77%), but higher compared with 1929 (+122% against +94%).

GERMANY TABLE 7

INDICES OF INDUSTRIAL PRODUCTION IN GERMANY AND THE REST OF WESTERN EUROPE

(1938 = 100)

	Germany	Rest of Western Europe	Total Western Europe
1901	38	47	44
1913	66	70	69
1920	39	61	55
1921	48	49	49
1923	35	68	59
1927	72	82	79
1929	76	91	86
1932	45	75	66
1937	93	105	102
1938	100	100	100
1948	52	119	101
1955	169	179	177

Germany went through a remarkable period of expansion at the beginning of the century. Between 1901 and 1913 industrial production increased considerably more quickly than in the rest of Europe (+73% compared with +64%). In 1913 the volume of German industrial production was near to that of the United Kingdom.

After the war, in 1920, industrial production was at the same level as in 1901, and right up to 1927 political and economic difficulties kept it well below the 1913 level; in 1923, with the occupation of the Ruhr, production even fell below the 1901 level. Despite a recovery after 1927, industrial production in 1929 was still only 14% higher than in 1913. In 1932, at the depth of the depression, industrial production was hardly higher than in the early years of the century and one-third below 1913, while for the rest of Europe industrial production never fell below the 1913 level.

In 1933, the recovery began in Germany as in the other countries. Starting much lower, German industrial production increased very rapidly; in 1937, it was 23% above the 1929 level, while the increase for the rest of Europe was only 15%. Moreover, in Germany alone of the major European countries, 1938 was a year of expansion; industrial production increased by 7%, while for the rest of Europe it fell by 5%.

After the end of the Second World War, the period of recovery began much later in Germany than in the other countries: in 1948, when all the other countries had regained or surpassed their pre-war industrial levels and, taken as a whole, had an industrial production 13% above 1937, industrial production in Germany was scarcely half what it had been in 1938.

From then on, progress was rapid, and by 1955 Germany had almost made good the 1948 leeway and caught up with the rest of Europe. Compared with 1929, German industrial production had multiplied by 2.2, as much as in the United Kingdom and rather more than in the rest of Europe.

France

Table 8

INDICES OF INDUSTRIAL PRODUCTION IN FRANCE AND THE REST OF WESTERN EUROPE
(1938 = 100)

	France	Rest of Western Europe	Total Western Europe
1901	54	43	44
1913	89	65	69
1920	61	55	55
1921	58	47	49
1929	121	81	86
1932	90	63	66
1937	108	101	102
1948	108	100	101
1955	162	179	177

France enjoyed at the beginning of the century a more rapid rate of expansion than the United Kingdom and the rest of Western Europe. Industrial production in France increased by 65% between 1901 and 1913, the increase for the rest of Europe being only 54%. The War struck a hard blow at French industry; in 1920 production was no more than 69% of what it had been in 1913, while for the rest of Europe, excluding Germany, the proportion was 95%. The 1921 slump hit industrial production in France less than in the United Kingdom, the drop between 1920 and 1921 being only 6%, and the recovery which followed was very considerable. Between 1920 and 1929 French industrial production doubled, while that of the rest of Europe increased by only a half.

Industrial production in France increased by 125% between 1901 and 1929; this was more than in the rest of Europe, where the increase was only 90% (9).

The slump hit France in 1931, later than the other countries. Industrial production fell by 26%, a similar drop to that in the other countries of Europe; but, unlike the latter, France « got bogged down » in the depression. After 1932, and right up to 1938, industrial production stagnated at a level below — some 10 to 20% below — that of 1929, which the rest of Europe regained as early as 1935. In 1937, while production in the rest of Europe was 25% above the 1929 level and in the United States had again reached that level, industrial production in France was still 11% below it.

Between 1948 and 1955 the increase in industrial production was 50% for France and 79% for the rest of Europe (10). French industrial production in 1955 was 50% higher than in 1937, while the increase for the rest of Europe was 77%; it was one-third higher than in 1929, that of the rest of Europe being more than double (2.2 times), and three times as much as in 1901, while for the rest of Europe the increase was more than fourfold.

Belgium

Table 9

INDICES OF INDUSTRIAL PRODUCTION IN BELGIUM AND WESTERN EUROPE
(1938 = 100)

	Belgium	Western Europe
1901	52	44
1913	77	69
1929	107	86
1932	78	66
1937	111	102
1948	121	101
1955	168	177

Industrial production in Belgium a little more than trebled between 1901 and 1955,

(9) During the whole of this period, industrial development in France was favoured by a number of factors. Up to 1913, colonial expansion and foreign investment gained big orders for French industry; after 1919, the requirements of reconstruction and a very low exchange rate for the franc, which gave French industrial products a commercial advantage on foreign markets, also meant large orders, particularly for heavy industry. The immigration of nearly 2 million foreigners enabled the labour demand to be met. Up to 1929 these factors stimulated industrial production and offset the negative element of an inadequate development of the home market, which had expanded hardly at all, France's population having remained stationary since the end of the 19th century.

(10) Only since 1953 is industrial production in France increasing at the same rate as in the rest of Europe.

while it quadrupled in the rest of Europe. Between 1901 and 1929 Belgium made similar progress to that of the other countries and its industrial production doubled. Very hard hit by the slump which continued there right up to 1934, Belgium did not regain the 1929 level until 1937. After the War, Belgian industrial production increased less than that of Europe as a whole. The 1955 level is only 51% above that of 1937 and 57% above that of 1929.

NETHERLANDS TABLE 10

INDICES OF INDUSTRIAL PRODUCTION IN THE NETHERLANDS AND WESTERN EUROPE

(1938 = 100)

	Netherlands	Western Europe
1925	62	71
1929	82	85
1930	89	81
1937	91	102
1938	100	100
1948	114	101
1955	202	177

It is not possible from the data available to follow the progress of industrial production in the Netherlands from the beginning of the century (the first indices calculated start at 1925). 1955 industrial production in the Netherlands was 3.3 times the 1925 figure, for Western Europe as a whole only 2.5 times. It seems probable that industrial production increased about sixfold between 1901 and 1955.

The 1929 slump reached the Netherlands later than the other countries (production there increased by 8% between 1929 and 1930, while for Western Europe it dropped by 7%), but it continued until 1933. The 1929 level was not overtaken until 1938. After the War the increase in industrial production was rapid and of roughly the same order as for Western Europe. In 1955 Netherlands production had more than doubled compared with 1930, the peak year before the slump, and doubled since 1938, the peack year before the Second World War.

ITALY TABLE 11

INDICES OF INDUSTRIAL PRODUCTION IN ITALY AND WESTERN EUROPE

(1938 = 100)

	Italy	Western Europe
1901	31	44
1913	57	69
1920	52	55
1929	88	86
1937	101	102
1948	102	101
1955	196	177

Italy is one of the countries of Europe in which industrial production increased most rapidly: between 1901 and 1955, Italian industry increased the volume of its production sixfold.

Progress was rapid between 1901 and 1913, the total increase being 84%, while for the whole of Europe it was only 56%. The War speeded up the development of industrialisation in the whole of the peninsula, and in 1920-21 the level of industrial production, though below that of 1913, was less depressed than in Western Europe as a whole. Between 1920 and 1929 the increase in Italian industrial production was 69%, i.e. more than that achieved by Western Europe; between 1929 and 1937 industrial production increased by 15%, rather less than most other European countries in the process of industrialisation.

Since 1948, when the 1937 level was regained, Italian industrial production has increased at such a pace that Italy is counted among the countries of Europe which have made the most appreciable progress compared with prewar. In 1955 the volume of industrial production was almost twice that of 1937, while for

the rest of Europe the increase was only 75%. Comparing 1955 with 1929, industrial production has increased as much in Italy as in the United Kingdom and Germany, and slightly less than in the United States.

SWEDEN, NORWAY AND DENMARK TABLE 12

INDICES OF INDUSTRIAL PRODUCTION IN SWEDEN, NORWAY AND DENMARK, AND IN WESTERN EUROPE
(1938 = 100)

	Sweden	Norway	Denmark	Western Europe
1901	n.a.	34	n.a.	44
1913	44	57	39	69
1920	42	62	54	55
1929	65	77	72	86
1937	99	100	99	102
1948	150	133	130	101
1955	187	205	170	177

The Scandinavian countries — Sweden, Norway and Denmark — are, together with Italy, the European countries whose industrial production expanded most between 1901 and 1955 (11): Less hard hit than other countries by the 1929 slump, they were able as members of the Sterling area to benefit as early as 1932 by the recovery which followed the devaluation of the £, and in 1937 the Scandinavian countries were among those whose industrial production had expanded most since 1929. Progress has continued at a very rapid pace since the end of the War. Compared with 1929, the volume of industrial production in the Scandinavian countries has multiplied by 2.5, which is a greater increase than that recorded not only in the rest of Europe but even in the United States. Compared with 1901, industrial production in Sweden seems to have increased about sevenfold, that in Norway and Denmark about sixfold.

(11) The low degree of industrialisation at the beginning of the period and the fact that production was stimulated by the First World War — and in the case of Sweden by the Second — could explain this development.

AUSTRIA TABLE 13

INDICES OF INDUSTRIAL PRODUCTION IN AUSTRIA AND IN WESTERN EUROPE

	Austria	Western Europe
1901	(50)	44
1913	(83)	69
1929	99	86
1937	100	102
1955	220	177

Industrial production in Austria increased by 65% between 1901 and 1913, i.e. appreciably more than the European average. But after the First World War, when Austria was no longer the industrial centre of an Empire and political and economic difficulties there were particularly severe, progress was slight: in 1929, the 1913 level was exceeded by only 19%, and the volume of industrial production in 1937 was still near that of 1929. After the Second World War, on the contrary, the increase in industrial production in Austria was greater than the European average. Over the whole period 1901-1955, industrial production in Austria increased fourfold, i.e. the same increase as in Western Europe.

3. Development in the United States.

At the beginning of the century, the volume of industrial production in the United States was already the highest of any country in the world, though still below the total for Western Europe. From 1901 to 1955 the volume of industrial production in the United States increased eightfold. It almost quadrupled between 1901 and 1929, and rather more than doubled between 1929 and 1955.

The development of production in the United States can also be sub-divided into several phases, which coincide with those observed for Europe and have the same characteristics.

TABLE 14

INDICES OF INDUSTRIAL PRODUCTION IN THE UNITED STATES
(1938 = 100)

Year	Index	Year	Index
1901	35	1937	127
1907	51	1938	100
1908	43	1943	270
1913	66	1948	219
1918	88	1949	201
1920	84	1953	281
1921	68	1954	262
1929	124	1955	291
1932	68		

1. 1901-1913: Between 1901 and 1913 the increase was more rapid than in Europe and continuous — apart from the recession in late 1907 and 1908 which caused production to drop by 15% between the two years. Production was again rising rapidly at the end of 1908, and in 1913 exceeded the 1901 level by about 88%.

2. 1914-1921: The First World War provided a stimulus to the expansion of United States industrial production.

In 1918, it was one-third higher than in 1913; in 1920, despite the contraction following the end of hostilities, the increase over pre-war was still about 30%. 1921 saw a crisis which marked the end of the war boom for the United States; industrial production fell by 20%, but even at this level was still equal to that of 1913, whereas in Western Europe industrial production in 1921 hardly exceeded the 1901 figure.

3. 1921-1929: During this period the increase in production in the United States was of the same order as in Western Europe (+83% between 1921 and 1929, +47% between 1920 and 1929). In 1929, the level of industrial production in the United States was 3.5 times the 1901 figure, a much greater advance than in Europe, the difference being mainly due to the progress made in the United States between 1913 and 1920.

4. 1930-1932: A slump of exceptional gravity and duration set in in the United States at the end of 1929. Industrial production crashed: in 1932, at the depth of the depression, it represented only about half (54%) of the 1929 volume, i.e. appreciably the same level as in 1921 and 1913.

5. 1933-1938: In 1933 the recovery began; it was slower and less pronounced than in Europe: the 1929 level was regained in 1937, but production fell again in 1938 to 21% below the 1937 level.

6. 1939-1948: The Second World War — like the First — gave a new stimulus to American industrial production. In 1944 it had doubled compared with 1937 or 1929: at the end of hostilities, the changeover from a war economy to a peace economy was made without a hitch; in 1948, the volume of industrial production in the United States was three-fourths higher than in 1937 and 1929.

7. 1949-1955: The 1949 recession led to only a slight decline (less than 9%) in industrial production, and recovery was already on the way at the beginning of 1950, before the Korean War. From then on, production increased until 1954, when there was a recession similar in gravity to that of 1949, but a brisk recovery was already apparent in 1955. In that year, production reached a level 130% higher than in 1937 and 1929, and almost eight times higher than at the beginning of the century.

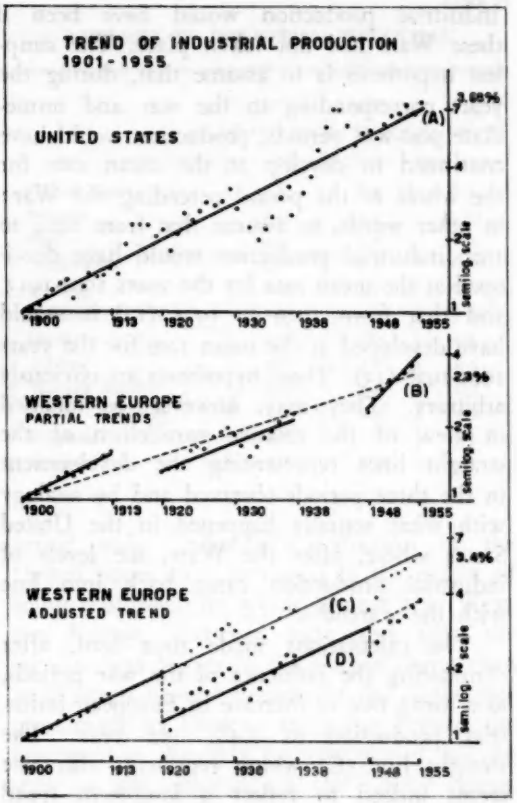
4. Long-Term Trends and the Impact of the Wars on the Development of Industrial Production in Western Europe and the United States.

A comparison between the United States on the one hand and the whole of Western Europe on the other has the advantage of weighing in the balance two economic entities whose dimensions are of the same order, while a comparison between the United States and individual European countries contrasts entities which are out of all proportion.

As the preceding paragraphs have shown, except during the war periods, there is no fundamental difference between the development of industrial production in the United States and that in Europe: the movements are in the same direction and the differences of degree that may be noted do not at first sight seem disproportionate for any of the periods considered, particularly when it is recalled that the population of the United States has increased more quickly than that of Western Europe (cf. p. 216). It may be interesting to consider whether it is possible to discern any long-term trends, for the United States as for Europe, and if it is, to compare these trends.

Graph III shows the development of industrial production in the United States since the beginning of the 20th Century. The calculation of the mean annual rate of increase corresponding to the development observed for the whole period, gives a figure of 3.6%. This rate of increase is represented on the graph by the straight line (A). This straight line, superimposed on the curve for the values actually observed, seems to express more than a mathematical interpolation. In fact, after the greatest upheavals (1914-1918 War, slump and Second World War), the points corresponding to actual industrial production are noticeably in line with the straight line A, which suggests the existence of a long-term tendency.

It is much more difficult to plot and to interpret a similar graph for the development of industrial production in Europe. The lack of figures for the war and immediate postwar periods means that the development observed is not continuous. If, despite the « gaps », a calculation is made of the mean annual rate of increase corresponding to the total increase observed, a figure of 2.3% is obtained. If this mean rate of increase is plotted on the graph, the resulting straight line (B) is less steep than each of the straight lines for the three trends observed: for each of the three periods for which data are actually available, the rate of increase is in fact appreciably



Graph III

greater than the 2.3% per year calculated for the whole period 1901-1955, (see Graph III).

However, the straight lines representing the mean annual rate of increase during each of the three periods 1901-1913, 1920-1938 and 1948-1955 are almost in line, as though each of the Wars had thrown out of alignment portions of an appreciably regular curve. This leads one to wonder whether, by means of a calculation eliminating the influence of the Wars, it might not be possible to discern for Europe — as we did for the United States — a rate of increase corresponding to the development observed during the peace-time years and pointing to a trend.

Eliminating the influence of the two World Wars amounts to making an assessment of what the development of European

industrial production would have been if these Wars had not taken place. The simplest hypothesis is to assume that, during the years corresponding to the war and immediate post-war periods, production would have continued to develop at the mean rate for the whole of the period preceding the War: in other words, to assume that from 1914 to 1920 industrial production would have developed at the mean rate for the years 1901-1913, and that from 1939 to 1951 (12) it would have developed at the mean rate for the years 1901-1938 (13). These hypotheses are obviously arbitrary. They may, however, be retained in view of the relative parallelism of the straight lines representing the development in the three periods observed and by analogy with what actually happened in the United States where, after the Wars, the levels of industrial production came back into line with the « trend ».

The calculations made then lead, after eliminating the influence of the war periods, to a mean rate of increase in European industrial production of 3.4% per year. The straight line (C) which represents this rate seems indeed to reflect a long-term trend disturbed by the two World Wars.

The rate of increase of industrial production in Western Europe (3.4%) after eliminating the influence of wars, does not differ greatly from that found for the United States (3.7%). It is true that the cumulative increase leads in the long run to differences which are by no means negligible: in 55 years the American rate corresponds to a multiplication by 7 of the initial volume of production, while the European rate means a multiplication by only 6. But this divergence would disappear if the increases in population were taken into account, i.e., if the increase in industrial production *per head* were considered (cf. p. 221).

Europe's falling-behind then seems mainly to reflect the impact on European industry of the two Wars, much more than a fundamental difference of trend in the expansion of industrial production over the periods considered.

It should be noted that the disparity between developments in Europe and in the United States reflects rather the *falling-behind* of Europe during the Wars than an intrinsic *advance* by the United States. It is true that industrial production in the United States during the 1915-1918 and 1941-1945 periods was well above the level calculated from the 3.6% mean annual rate of increase, but after each of the Wars production came back into line with the « trends ».

5. The Impact of the Wars on European Industrial Production.

In both 1920 and 1948, industrial production in Europe was rather more than one-third below the level it would have reached if it had followed the trend. In other words, the percentage drop attributable to the war period was much the same for both World Wars.

There was, however, a fundamental difference in the development of industrial production after each of the two Wars. After the First World War, European industrial production did not make good the hypothetical back-log: production levels in 1929 and 1937 (the two peaks of the inter-war period) are 68% and 69% respectively of the value which would result if the « trend » were extrapolated from 1913: the disparity in 1929 and 1937 thus remains hardly less than that observed in 1920.

After the Second World War, on the other hand, a very rapid increase in industrial production enabled Europe to make up

(12) In addition to the War and immediate post-War years (1939-1947), the years 1948-1951 have been eliminated. During this period the industrial production of Western Europe increased very rapidly, 38% in four years, but this expansion may be very largely attributed to an exceptional factor: Marshall Aid. Marshall Aid enabled the countries of Europe directly or indirectly to devote to reconstruction and productive investment a part of their resources which otherwise would have had to pay for imports of goods for immediate consumption (wheat, coal, textile fibres etc.).

(13) Obviously after allowing for the influence of the 1914-1918 War.

the hypothetical back-log due to the War: industrial production in 1955 reached 98% of what it would have been if the « trend » had actually continued from the levels of 1937 and 1938 [see Graph III, line (D)].

TABLE 15

INDICES OF INDUSTRIAL PRODUCTION IN WESTERN EUROPE

	Actual Indices		Estimated Indices (a)		Ratio of actual to estimated Indices	
1901	100		100		100	
1913	155		153		101	
1920	125		196		64	
1929	196		288		68	
1937	231	100	334	100	69	100
1949	230	100	482	146	48	68
1955	400	174	591	177	68	98

(a) Indices estimated on the basis of the trend after allowing for the effect of the Wars.

The above conclusions are, of course, highly conjectural. Since there is no way of assessing the precise effect of the World Wars, the percentages shown are merely rough approximations which nevertheless seemed worthwhile.

* * *

The following Table summarises the remarks made above concerning the individual countries of Europe and shows the comparative development of their industrial production. The countries are arranged in order according to increase in industrial production between 1901 and 1955.

Over the period 1901-1955 industrial production increased more in the United States than in any other country we have examined: during those 55 years the volume of industrial production increased eight-fold in the United States and four-fold in Western Europe. If the two periods 1901-1929 and 1929-1955 are studied separately, it will be seen that the expansion in United States industry outstripped that in Western Europe during the first

TABLE 16

INCREASES IN INDUSTRIAL PRODUCTION

	1929 if 1901 = 1	1955 if 1929 = 1	1955 if 1901 = 1
United States	3.5	2.3	8.3
Sweden	(2.4)	2.9	(7.0)
Italy	2.9	2.2	6.5
Netherlands	(2.4)	2,5	(6.0)
Norway	2.3	2.7	6.1
Denmark	(2.5)	2.3	(5.8)
Germany (F.R.)	2.0	2.2	4.4
Austria	2.0	2.2	4.4
Western Europe	2.0	2.0	4.0
United Kingdom	1.6	2.2	3.5
Belgium	2.1	1.6	3.3
France	2.2	1.3	3.0

period only; industrial production in the United States then increased to the extent of being multiplied by 3.5 as against 2 in Western Europe. Between 1929 and 1955 the increase was higher in the United States than in Western Europe because of the slight progress made by France: excluding France, the average for Western Europe would be the same as that recorded in the United States. In fact, several European countries (Sweden, the Netherlands and Norway) made greater progress between 1929 and 1955 than the United States.

Inside Western Europe there are marked differences in the increases in industrial production achieved between 1901 and 1955 by the various countries. Sweden — one of the few European countries not directly engaged in either of the two World Wars — takes the lead with a total increase not very much below that of the United States. Italy, the Netherlands, Denmark and Norway show increases much above (40% to 60% above); the European average. Germany, Austria the United Kingdom and Belgium increased by about that average, and France by considerably less (— 25%).

Between 1901 and 1929, as between 1929 and 1955, almost every country at least doubled its industrial production. The exceptions

are the United Kingdom during 1901-1929 and France and Belgium during the period 1929-1955. These three countries are the only ones which, for the whole of the period 1901-1955, show an increase below the average for Western Europe.

Chapter IV

STRUCTURE OF PRODUCTION IN THE MANUFACTURING INDUSTRIES

Industrial production has been defined as production resulting from the following three activities: mining and quarrying, production of electricity and gas, and manufacturing.

Production in the first two activities depends to a large extent on the natural resources of territories. It is true that the concept of « natural resources » is constantly changing, but present « natural resources » still seem very unequally distributed and are not everywhere uniformly easy to work.

If mining output in the United States greatly exceeds that in Europe, this is largely because the former's resources are more extensive and easier to work. During the whole of the period covered by this study, the expansion of mining production in Western Europe was only 70%, while in the United States there was a fivefold increase. The rigidity of European mining production robs any comparison with the United States of much of its significance; comparisons between the countries of Europe would have even less point.

It is hardly possible either to make comparisons covering combined production of electricity and gas. In 1955 electricity production in the United States was more than 70% higher than the overall figure for Western Europe; as for production of manufactured gas, a comparison between Europe and the United States would mean very little in view of the importance for the United States of the exploitation of its natural gas resources (14).

For the manufacturing industries, on the other hand, whose location was strongly influenced in the 19th century by the presence of certain raw materials (particularly coal and iron), this is no longer such a decisive factor. The location of natural resources, though still an appreciable factor in the metal industries, has little effect nowadays on the development of the processing industries which account for the major part of the volume of manufacturing output. The development of the processing industries reflects above all the economic vitality of the various countries now that the extension of transport and the volume of trade enable industry — previously mainly confined to processing national resources — to obtain supplies from the whole world. Europe, poor in raw materials, uses the resources both of its Overseas Territories and of other countries to meet the requirements of its manufacturing industries; even the United States, despite its natural wealth, tends increasingly to rely on imported raw materials for its manufacturing needs.

It is thus by analysing the volume and development of the manufacturing industries — which represent between 85% and 90%, according to the country (15), of total industrial production — that we can best bring to light the real differences in economic expansion between the various countries, and

(14) Detailed comparative data, not only for the United States but also for Western Europe and the individual countries of Europe, are given in « Industrial Statistics 1901-1955 » published by the O.E.E.C. and in Annex 2 to this study.

(15) For Western Europe as a whole, manufacturing accounts for 87% total industrial production; the percentage in the United States is about 90%.

the relative contribution they have made to world economic development.

The expression « manufacturing » is attributed to a wide range of industries which have followed very different developments. For the requirements of this study, manufacturing has been sub-divided into six sectors (16):

1. Food, beverage and tobacco manufactures;
2. Manufacture of textiles;
3. Basic metal industries;
4. Manufacture of metal products;
5. Manufacture of chemicals and chemical products and products of coal and petroleum;
6. Other manufacturing industries.

(16) These six sectors are defined by reference to the International Standard Industrial Classification (I.S.I.C.) (cf. Annex 1, p. 223).

1. Structure of Manufacturing Production in Western Europe and the United States.

Tables 17 and 18 compare the structure of manufacturing production in Western Europe and the United States, as well as the changes in structure which have occurred over a period of time. In both of these Tables the figures refer to 1901, 1913, 1929, 1937 and

VOLUME OF PRODUCTION IN THE VARIOUS SECTORS OF MANUFACTURING — TABLE 17

(European manufacturing production in 1955 = 100)

	Western Europe					United States				
	1955	1937	1929	1913	1901	1955	1937	1929	1914	1899
Manufacturing	100	58	50	40	25	166	69	68	35.5	19
Food	13	9	8	7.5	7	18	10.5	9.5	7	4.5
Textiles	8	7	7	7	5	13	8.5	7.5	6.5	4
Basic metal	9	5.5	5	4	2	14.5	6.5	7	3.5	1.8
Metal products	34	16	13	9	4	68.5	21	22.5	4.5	1.7
Chemicals	14	6	5	2.5	1.5	22	6.5	5.5	2	1
Others	22	14.5	12	10	5.5	30	16	16	11	6

SHARE OF EACH SECTOR IN TOTAL MANUFACTURING PRODUCTION — TABLE 18

(Percentages)

	Western Europe					United States				
	1955	1937	1929	1913	1901	1955	1937	1929	1914	1899
Manufacturing	100	100	100	100	100	100	100	100	100	100
Food	13	15	16	19	27	11	15	14	20	24
Textiles	8	12	14	18	20	8	12	11	19	20
Basic metal	9	10	10	10	7	9	9	10	10	9
Metal products	34	28	27	24	16	41	31	33	13	10
Chemicals	14	10	10	6	5	13	10	8	6	5
Others	22	25	23	24	25	18	23	24	32	32

1955 which marked the successive « peaks » of production in both Western Europe and the United States.

Table 17 compares volumes of production. For each year, the volume of production in manufacturing industries as a whole and in each sector is expressed, for both Western Europe and the United States, as a percentage of the total volume of production in all manufacturing industries in Western Europe in 1955, which has been taken as an international unit.

Table 18 shows, for Europe and the United States, the share of each sector in total manufacturing production in each of the years considered.

A comparison of the volume of production, both in manufacturing industries as a whole and in the individual sectors, shows that the volume of production in the United States in 1955 was distinctly higher in every case than that in Europe. On the other hand, the share of each sector in total manufacturing production in 1955 was more or less the same on both sides of the Atlantic, with the exception however of the metal products sector whose share was appreciably greater in the United States than in Europe.

The breakdown of production between the various manufacturing sectors (see Table 18) showed much the same development in the United States and in Western Europe during the period under review. In both cases, the relative importance of the food and textiles industries declined considerably between 1901 and 1955: these two sectors accounted in 1901 for 47% of manufacturing production in Europe and 44% in the United States; in 1955 the proportion had fallen to 21 and 19% respectively. The share of the basic metal industries remained fairly constant in both the United States and Europe. The share of the metal products and chemicals industries rose: in 1901 it represented 21% of total manufacturing production in Europe and 15% in the United States; in 1955, 48% and 54% respectively.

* * *

A study of the volume of production, of its breakdown between the various sectors and of the development thereof suggests the following remarks:

Food, beverage and tobacco manufactures. The volume of production in this sector in the United States exceeded that in Western Europe by more than one-third.

Between 1901 and 1905 the volume of production in this sector doubled in Western Europe and quadrupled in the United States. The increases were less than those for manufacturing as a whole, so that the share of this sector in manufacturing production declined both in the United States and in Europe, and to much the same extent: from very nearly a quarter in 1901 it had fallen by 1955 to no more than one-eighth.

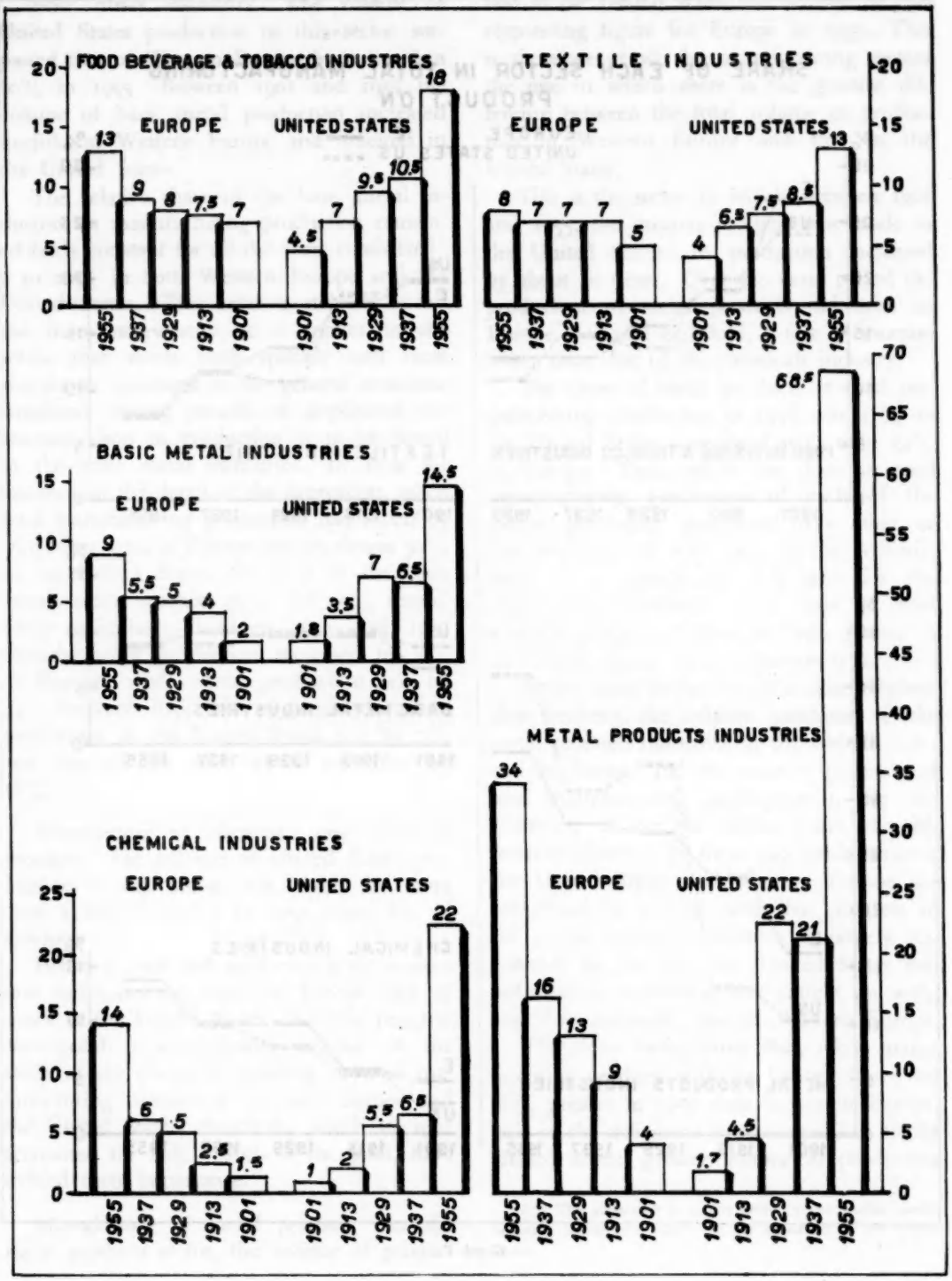
Manufacture of Textiles. In 1955 the volume of textiles production in the United States was three-fifths more than in Europe. The situation differs widely according to the textiles branch considered: Western Europe has a bigger woollen industry than the United States, while the reverse is true of cotton. In the case of artificial textiles, Europe is ahead of the United States for staple fibre but is behind for rayon; for the new non-cellulose synthetic textile fibres, on the other hand, the United States has a big advance over Europe.

The volume of textiles production has increased by more than a half (+60%) in Europe since 1901, while in the United States it has increased more than threefold.

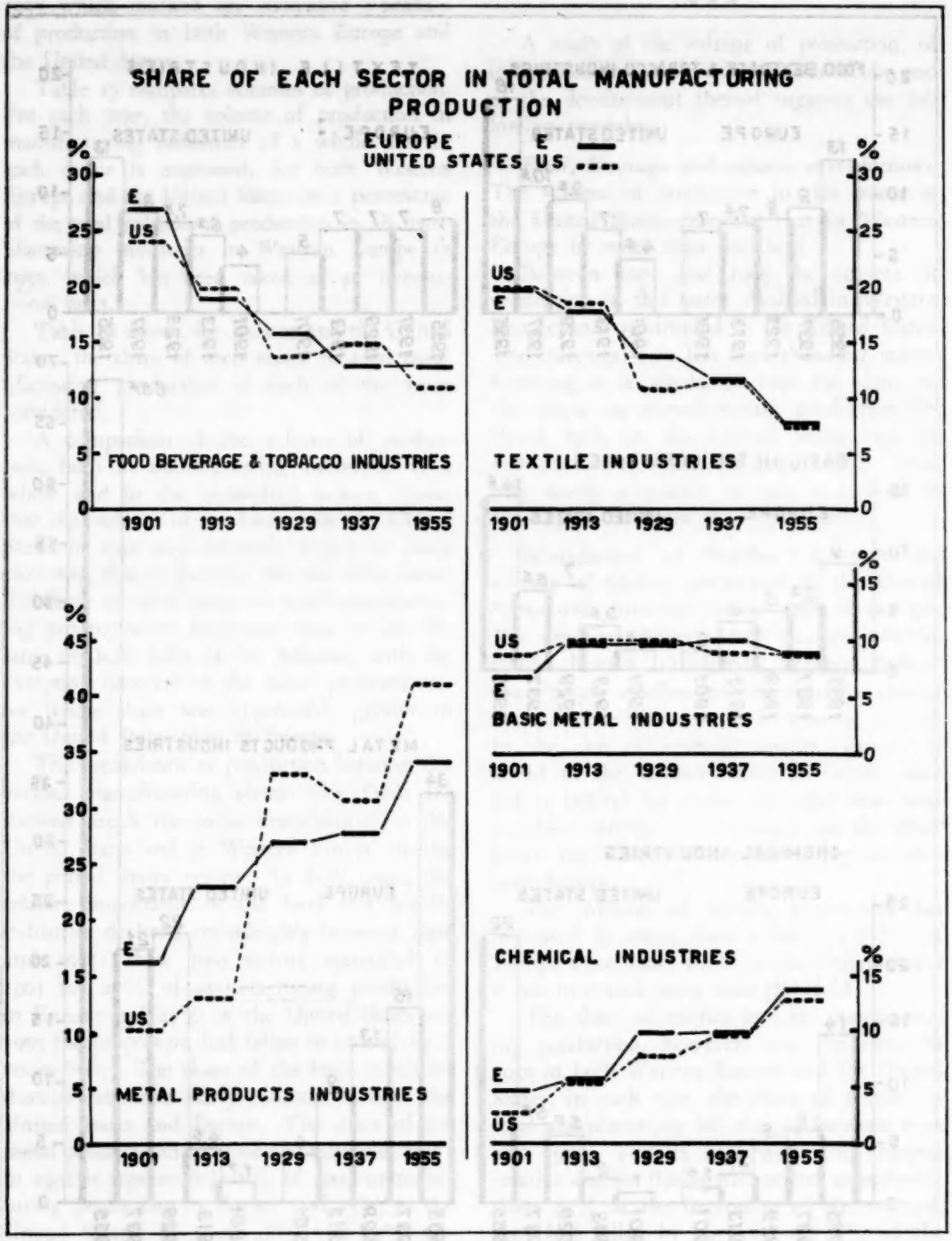
The share of textiles in total manufacturing production, however, was the same in 1955 in both Western Europe and the United States; in each case, the share of textiles in total manufacturing fell sharply between 1901 and 1955. Textiles underwent the sharpest relative decline during the period considered: from 20% at the beginning of the century, they had fallen by 1955 to only 8% of the total.

VOLUME OF PRODUCTION IN THE VARIOUS SECTORS OF MANUFACTURING

(European manufacturing production in 1955 = 100)



Graph IV


SHARE OF EACH SECTOR IN TOTAL MANUFACTURING PRODUCTION
EUROPE E
UNITED STATES US
%
30
25
20
15
10
5
0
E
US
FOOD BEVERAGE & TOBACCO INDUSTRIES
1901
1913
1929
1937
1955
US
E
TEXTILE INDUSTRIES
45
40
35
30
25
20
15
10
5
BASIC METAL INDUSTRIES
METAL PRODUCTS INDUSTRIES
CHEMICAL INDUSTRIES

Graph V

Basic metal industries. The volume of United States production in this sector surpassed that of Western Europe by more than 60% in 1955. Between 1901 and 1955 the volume of basic metal production increased fivefold in Western Europe and ninefold in the United States.

The relative share of the basic metal industries in manufacturing production remained fairly constant for all the years considered: 9 to 10% in both Western Europe and the United States. This relative stability is all the more noteworthy as it applies to the sector that reacts most quickly and most sharply to variations in the general economic situation: during periods of depression the sharpest drop in production is to be found in the basic metal industries. In 1932 for instance, at the depth of the depression, when total manufacturing production had fallen by 25% since 1929 in Europe and by almost 50% in the United States, the drop in the basic metals sector reached 45% and 75% respectively. Similarly, between 1951 and 1952 manufacturing production increased by 1% in Europe, while metal production fell by 4%; between 1953 and 1954 manufacturing production in the United States fell by 7% and that of the basic metal industries by 18%.

Manufacture of chemicals and chemical products. The volume of United States production in this sector was higher by more than a half (+55%) in 1955 than that of Europe.

Between 1901 and 1955 chemicals production multiplied 10 times in Europe and 23 times in the United States. To this progress corresponds a considerable increase in the share of the chemicals industry in total manufacturing production: in both Europe and the United States, chemicals, which in 1901 accounted for only 1/20th of the total, have trebled their importance.

Manufacture of metal products. In the metal products sector, the volume of production in the United States was double the corresponding figure for Europe in 1955. This is therefore of all the manufacturing sectors the one in which there is the greatest difference between the total volume of production in Western Europe and that in the United States.

This is the sector in which, between 1901 and 1955, the greatest progress was made in the United States: its production increased by about 40 times. Over the same period the production of metal products industries in Europe increased eightfold, a rate of increase lower than that of the chemicals industry.

The share of metal products in total manufacturing production in 1955 was 41% in the United States, compared with only 34% in Europe. Thus, while the share in total manufacturing production of each of the sectors previously considered was more or less the same on both sides of the Atlantic, there is a considerable difference for the engineering industries; their share in total manufacturing production is 1/5th greater in the United States than in Europe (17).

There seems in fact to be a close relationship between the relative positions of the metal products industries in the United States and in Europe and the relative positions of total manufacturing production in the two countries. If, for the various years, the differences observed in these two fields between the United States and Western Europe are considered, it will be seen that progress in the metal products industries is largely responsible for the fact that United States manufacturing production first caught up with, and then overtook, that of Western Europe.

The above table shows that, while manufacturing production in the United States was 66% greater in 1955 than it was in Europe, half of the difference is accounted for by the United States' greater volume of production

(17) This difference is largely offset by the « other manufacturing industries » which are less important in the United States.

in the metal products industries. Similarly, the increase in production of United States engineering industries between 1901 and 1955 largely explains how United States industrial production, which was below that of Europe in 1901, now exceeds it.

TABLE 19

VOLUME OF PRODUCTION IN UNITED STATES AND WESTERN EUROPE

(Manufacturing production in Western Europe in 1955 = 100)

	Manufacturing Production			Production of Metal Products		
	United States	Europe	Difference	United States	Europe	Difference
1955	166	100	+ 66	68	34	+ 34
1937	69	58	+ 11	21	16	+ 5
1929	68	50	+ 18	22	13	+ 9
1913	35	40	— 5	4.5	9	— 5
1901	19	25	— 6	1.7	4	— 2

Developments in manufacturing being practically identical with developments in total industrial production, it can be seen that the United States' superiority is chiefly accounted for by the dynamic nature of production in the metal products sector which is largely made up of equipment industries.

2. Structure of manufacturing Production in the Major European Countries.

The manufacturing production of Western Europe, like total industrial production of which it represents about 87%, is very unevenly distributed among the various countries. The structure of manufacturing production too, i.e. the breakdown of production between the various industrial sectors, differs appreciably according to the country considered.

Table 20 compares the absolute volume of manufacturing production — overall and by sectors — in the major countries in 1955, expressed as a proportion of the total volume of manufacturing production in Western Europe in 1955, taken as an international unit. Table 21 shows for each country the breakdown of manufacturing production between the various sectors.

TABLE 20

VOLUME OF MANUFACTURING PRODUCTION, OVERALL AND BY SECTORS, IN THE MAJOR EUROPEAN COUNTRIES IN 1955

(Total manufacturing production in Western Europe in 1955 = 1,000)

	West. Europe	United Kingdom	Germany	France	Italy	Belgium	Netherlands	Sweden	Norway	Denmark	Austria	Others
Manufacturing	1,000	300	233	144	86	42	39	41	13	14	23	65
Food	131	42	27	11	11	6	8	5	2	4	2	13
Textiles	82	18	16	13	10	5	4	2	1	1	3	9
Basic metals	90	23	21	14	10	7	2	2	1	0	4	6
Engineering	337	114	84	52	17	13	16	16	3	4	7	11
Chemicals	143	37	34	20	25	6	5	2	2	1	2	9
Others	217	66	51	34	13	5	4	14	4	4	5	17

TABLE 21

STRUCTURE OF MANUFACTURING PRODUCTION IN WESTERN EUROPE AND IN THE MAJOR EUROPEAN COUNTRIES IN 1955

(Manufacturing production in each country = 100)

	West. Europe	United Kingdom	Germany	France	Italy	Belgium	Netherlands	Sweden	Norway	Denmark	Austria	Others
Manufacturing	100	100	100	100	100	100	100	100	100	100	100	100
Food	13	14	11.5	7.5	12	13	20	13	17.5	31	10.5	20
Textiles	8	6	7	9	11.5	12	10	4	5	7.5	11.5	14
Basic metals	9	7.5	9	9.5	11.5	16	5	5.5	5	0	19	9
Engineering	34	38	36	36	20	34	41	39.5	25.5	30	29	17
Chemicals	14	12.5	14.5	13.5	29	15	12	6	15.5	6.5	9	14
Others	22	22	22	24.5	16	10	12	32	31.5	25	21	26

Table 22 shows each country's share in European production in the various manufacturing sectors in 1955. The figures in this Table give an idea of the concentration or dispersion of production in the various sectors within Western Europe.

Developments over time in the structure of manufacturing production in each country are reviewed in the following paragraphs which deal with the situation in each manufacturing sector. Tables 23 to 28 show, for 1901, 1913, 1929, 1937 and 1955, the share of the sector considered in total manufacturing production in each country.

TABLE 22

EACH COUNTRY'S SHARE IN EUROPEAN PRODUCTION IN THE VARIOUS MANUFACTURING SECTORS IN 1955

(Volume of European production in each sector in 1955 = 1,000)

	Total manufacturing	Food	Textiles	Basic metal industries	Metal products	Chemicals	Other manufacturing
Western Europe	1,000	1,000	1,000	1,000	1,000	1,000	1,000
United Kingdom	300	321	220	256	338	259	304
Germany	233	206	195	233	249	238	235
France	144	84	159	156	154	140	157
Italy	86	84	122	111	50	175	60
Belgium	42	46	61	78	39	42	23
Netherlands	39	61	49	22	47	35	18
Sweden	41	38	20	22	47	14	65
Norway	13	15	12	11	9	14	18
Denmark	14	31	12	0	12	7	18
Austria	23	15	37	44	21	14	23
Others	65	99	113	67	34	62	79

(a) *Food, beverage and tobacco manufacturing.*

TABLE 23

SHARE OF THE FOOD, BEVERAGE AND TOBACCO INDUSTRIES IN TOTAL MANUFACTURING
(percentage of each country's manufacturing production for each year)

	1955	1937	1929	1913	1901
Western Europe	13	15	16	19	27
United Kingdom	14	16	18	20	27
Germany	11	14	16	19	29
France	8	10	9	11	17
Italy	12	14	15	16	20
Belgium	13	18	18	23	35
Netherlands	20	34	32	40	51
Sweden	13	14	17	16	23
Austria	11	16	15	17	25
Norway	18	22	27	27	30
Denmark	31	30	31	44	53

In six of the countries considered, the share of this sector is not very different from the European average, i.e. 13%. However, Denmark, the Netherlands and Norway on the one hand and France on the other are very far from this average (above in the first case and below in the second), but these special situations can easily be explained. Denmark, the Netherlands and Norway specialise in producing manufactured foodstuffs, particularly for export, and have therefore developed their food industries more than the other countries; the share of these industries in total manufacturing production thus reaches 31% in Denmark, 20% in the Netherlands and 12% in Norway (18). France, on the other hand, is distinctly below the European average, the share of food manufacturing in total manufacturing being only 8%, despite natural conditions highly favourable for agricultural production.

In all the countries, the relative importance of the food, beverage and tobacco industries fell by almost a half between 1901 and 1955. This is the result not of any decline in the volume of production in these industries, which in fact doubled in Western Europe between 1901 and 1955, but of the much greater progress made in the other manufacturing sectors.

(18) In 1954, food products accounted for 70% of Danish, 30% of Netherlands and 20% of Norwegian exports.

(b) *Manufacture of textiles.*

TABLE 24

SHARE OF TEXTILES IN TOTAL MANUFACTURING
(percentage of each country's manufacturing production for each year)

	1955	1937	1929	1913	1901
Western Europe	8	12	14	18	20
United Kingdom	6	11	12	19	16
Germany	7	8	10	13	17
France	9	14	14	19	27
Italy	12	22	29	38	40
Belgium	12	16	19	19	18
Netherlands	10	15	15	19	21
Sweden	4	6	6	7	9
Austria	12	22	22	22	26
Norway	5	6	5	7	9
Denmark	8	8	7	12	13

The share of textiles in total manufacturing production in 1955 differs considerably from country to country. These differences seem to result chiefly from the following factors:

(a) the degree of industrialisation: the relative importance of textiles industries declines in proportion as industrialisation progresses;

(b) the place of textiles in external trade: textiles industries are more highly developed in countries where textiles play a more important part in the export trade (19).

The sharp decline between 1901 and 1955 in the share of textiles in total manufacturing

(19) In 1954 the percentage (in value) of manufactured textiles (yarns and fabrics) in total exports of the countries given in Table 24 was as follows: Western Europe 9.1%, United Kingdom 12.2%, Germany 5.1%, France 11.9%, Italy 16.1%, Belgium 12.7%, Netherlands 8.1%, Sweden 0.8%, Norway 0.4% and Denmark 1.1%.

production is also attributable to the influence of the above-mentioned factors. On the one hand, all the European countries were much more highly industrialised in 1955 than in 1901, and on the other hand, the increasing industrialisation of the non-European countries has robbed European textiles of a very large part of their 1901 foreign markets (20). The expansion of Europe's internal market between 1901 and 1955, due to both the increase in population and higher consumption of textiles per head, offset the decline in exports, so that the European textiles industries in 1955 had a volume of production higher by one-half than in 1901. This development was of course accompanied by marked changes in the internal structure of the textile industry.

(c) *Basic metal industries.*

TABLE 25

SHARE OF THE BASIC METAL INDUSTRIES IN TOTAL MANUFACTURING
(percentage of each country's manufacturing production for each year)

	1955	1937	1929	1913	1901
Western Europe	9	10	10	10	7
United Kingdom	8	8	7	7	7
Germany	9	12	12	13	9
France	10	10	11	11	7
Italy	11	10	10	7	5
Belgium	16	19	19	18	11
Luxemburg	64	64	68	62	44
Netherlands	5	3	2	—	—
Sweden	6	6	5	8	6
Austria	19	11	12	13	10
Norway	5	4	4	1	0

In 1955 the share of the basic metals sector in total manufacturing production in the major industrial countries of Western Europe (United Kingdom, Germany and France), was very nearly the same and corresponded with the European average, i.e. 9%.

The particular importance of this sector in Belgium (twice the European average) and Luxemburg (where the basic metals sector alone represents two-thirds of manufacturing production) is explained by the existence in both countries of an iron and steel industry — and in Belgium of a non-ferrous metals industry too — chiefly directed towards the export trade (21).

In Austria, owing to the recent development of steel and non-ferrous metal (mainly aluminium) producing industries, the share of basic metal industries in industrial production is also greater than the European average.

In the United Kingdom the relative importance of the basic metals industry has remained practically constant since 1901; for Western Europe as a whole, as for France, Belgium, Luxemburg and Sweden, the share of this industry in manufacturing production, after a sharp increase between 1901 and 1913, has not appreciably varied since. Thus we find inside Europe the same relative stability of the basic metals industry already noted in the comparison between Western Europe and the United States.

Countries in the process of industrialisation — such as Italy, where the share of basic metal industries increased till 1929, or the Netherlands, where this share is still increasing — are exceptions to this rule.

(d) *Manufacture of metal products.*

The metal products industries were the largest manufacturing sector in 1955. For Europe as a whole and for each individual country of Europe, this sector acounted for about one-third of manufacturing production; the only exception was Italy, less industria-

(20) It is precisely with the textiles industries that the non-European countries have begun their industrialisation, as they require only relatively little investment and a not very skilled labour force. At the same time they meet essential requirements of the population.

(21) In 1954, the Belgium-Luxemburg Economic Union exported nearly two-thirds of its crude steel production in the form of steel products. In the same year Belgium exported 80% of the copper, 70% of the lead, and 60% of the zinc refined by its metal industry.

TABLE 26

SHARE OF THE METAL PRODUCTS INDUSTRIES IN TOTAL MANUFACTURING

(percentage of each country's manufacturing production for each year)

	1955	1937	1929	1913	1901
Western Europe	34	28	27	24	16
United Kingdom	38	29	25	19	16
Germany	36	30	26	26	17
France	36	32	35	31	19
Italy	20	19	17	12	7
Belgium	34	27	27	24	21
Netherlands	41	23	31	28	15
Sweden	39	34	31	29	21
Austria	29	21	22	19	14
Norway	26	24	22	20	17
Denmark	30	25	28	12	7

lised than the other countries mentioned in Table 26, and whose metal products industry provided only 20% of manufacturing production. This sector also showed itself between 1901 and 1955 to be one of the most dynamic: in every case its relative importance was at least doubled. In the countries of Europe, as in the United States, the progress of the metal products sector is the main factor in the progress made in manufacturing industries as a whole.

The trend of the metal products industries and of their share in manufacturing can, in view of the sector's key importance, easily be compared with the trend of industrial production as a whole. In France the share of the metal products industries in manufacturing showed no increase between 1929 and 1955, and it is precisely in that country that the least progress was made over the same period in total industrial production. Conversely, an appreciable increase in the share of the metal products industries is always accompanied by a big increase in total industrial production, as is well illustrated by the examples of the United Kingdom between 1929 and 1955, Italy between 1901 and 1955, France between 1901 and 1929.

(c) *Manufacture of chemicals and of products of coal and petroleum.*

TABLE 27

SHARE OF CHEMICAL INDUSTRIES IN TOTAL MANUFACTURING

(percentage of each country's manufacturing production for each year)

	1955	1937	1929	1913	1901
Western Europe	14	10	10	6	5
United Kingdom	12	7	8	6	6
Germany	15	12	12	6	5
France	14	11	10	6	6
Italy	29	18	13	7	4
Belgium	15	11	9	7	6
Netherlands	12	8	7	4	3
Sweden	6	4	4	3	2
Austria	9	7	8	7	7
Norway	15	10	9	7	2
Denmark	7	8	7	5	4

The chemical industries' share in manufacturing production in 1955 did not differ greatly from the European average (14%) in the majority of countries. Italy on the one hand, and Sweden and Denmark on the other, are the exceptions to this rule, the former being well above the average and the latter well below. Italy, with her great oil refineries, her exploitation of natural gas and her powerful artificial textiles industry, has a chemical industry well in advance of the general level of industrialisation in the country; hence the large contribution — about 30% — of this sector to total manufacturing production (22). On the other hand, in Sweden and Denmark, where industries based on coal and petroleum derivatives are very small, the chemical industry's share is only one-half of the European average.

Though smaller than the metal products industries, the chemical industries are the most dynamic sector in Western Europe; their

(22) The increase in the chemical industry's share in Italian manufacturing production practically corresponds, between 1913 and 1937, with the development of artificial textiles and, between 1937 and 1955, with the development of oil refining, natural gas and their derivatives.

volume of production increased tenfold between 1901 and 1955. Inside the chemical industries, developments have been appreciably different in the various branches: « conventional » chemistry, built around sulphuric acid, has become relatively less important in view of the rise of artificial textiles and the chemistry of coal products and also, in recent years, as a result of the expansion of oil refineries and petroleum chemistry.

* * *

Although throughout this Chapter we have pointed to the differences in the situation of the various countries, it is nonetheless apparent that the trends everywhere have followed — and continue to follow — the same lines, and mostly in the same proportions.

Manufacturing production has everywhere increased; the sectors which have increased or diminished in importance are everywhere the same. The broad outline of the trend in manufacturing industries in Europe and the United States is roughly as follows: increase in total production, chiefly reflecting increased production in the metal products and chemicals sectors. Corresponding increase in the share of these two sectors, at the expense of the textiles and food industries; relative stability of the basic metal industries. The characteristics of this trend are so general that the degree to which each country is industrially developed can be roughly measured by the breakdown of its manufacturing production between the various sectors: if the contribution from food and textiles industries is high, the country is not very highly industrialised; conversely, the greater the share of the metal products and chemical industries, the more industrially advanced is the country considered.

The most striking instance of this is provided by a comparison between Western Europe and the United States. In 1901, when Europe's manufacturing production was greater than that of the United States, the metal products and chemical industries accounted for a larger part of manufacturing production in Europe than in the United States, while the food and textiles industries had much the same relative importance on both sides of the Atlantic. In 1955, when United States manufacturing production greatly surpassed that of Europe, it was in the United States that the share of the metal products and chemical industries was the greater, while the share of the food and textiles industries was smaller than in Europe.

Chapter V

VOLUME AND TREND OF INDUSTRIAL PRODUCT PER HEAD

Each country's importance depends on the volume of its industrial production; considered in relation to a country's population, its volume of production may reveal its degree of industrialisation.

The volume of industrial production per head of population, which we will call « industrial product per head », may be calculated on the basis of the absolute volume of production shown in Table 3 and the population figures shown in Table 28. Before the result of these computations is studied, a number of facts regarding population trends in the various countries during the first half of the 20th century must be considered.

1. Population Trends.

The population figures in Table 28 have been adjusted to ensure that the population

in all years relates to the 1955 territory of each country. In addition to absolute population figures in 1901, 1913, 1929, 1937 and 1955, the table shows the density of population in 1955, and the overall increase in population between 1901 and 1929 and between 1901 and 1955.

A glance at this table reveals the following facts:

(a) Between 1901 and 1955 the population of Western Europe increased by 88 million and that of the United States by 85 million. These increases, though similar in absolute terms, differ widely in terms of relative value, the population of Europe having increased by 46% and that of the United States by 113%. The population of Europe, which in 1901 was about 2½ times the population of the United States, was only 72% greater in 1955. However, the density of the European population is still four times that of the United States.

(b) In all European countries except Ireland, there was an increase between 1901 and 1955.

The increases recorded differ considerably from one country to another. Certain countries, such as Turkey and the Netherlands, doubled their population between 1901 and 1955. At the other extreme, the population of France increased by 16% and that of Austria by only 6% (23).

POPULATION OF THE UNITED STATES AND WESTERN EUROPE — TABLE 28

	Population (in millions)					Increase		Density per sq. Km, in 1955
	1955	1937	1929	1913	1901	1955 if 1901 = 1	1955 if 1929 = 1	
United States	165.2	129.0	121.8	97.2	77.6	2.13	1.36	21
Western Europe	284.1	245.7	234.0	216.6	195.0	1.46	1.21	81
United Kingdom	51.2	47.3	45.7	42.5	38.2	1.34	1.12	210
Germany	50.0	38.5	36.5	34.0	27.6	1.81	1.37	204
France	43.2	41,2	41.2	41.7	40.7	1.06	1.03	78
Italy	48.0	42.6	39.9	36.2	33.4	1.44	1.20	159
Belgium-Luxemburg	9.2	8.6	8.3	7.9	7.0	1.31	1.10	277
Netherlands	10.7	8.6	7.8	6.2	5.2	2.06	1.38	332
Sweden	7.3	6.3	6.1	5.6	5.1	1.41	1.19	16
Denmark	4.4	3.7	3.5	3.0	2.6	1.72	1.26	104
Norway	3.4	2.9	2.8	2.4	2.3	1,52	1.23	11
Switzerland	5.0	4.2	4.0	3.9	3.3	1.49	1.24	121
Austria	7.0	6.8	6.7	6.8	6.0	1.16	1.05	83
Greece	8.4	7.0	6.4	6.1	5.8	1.43	1.31	63
Turkey	23.4	16.7	14.4	10.5	8.5	2.75	1.63	31
Portugal	8,8	7.4	6.7	6.0	5.4	1,62	1.30	95
Ireland	2.9	2.9	2.9	3.1	3.2	0.91	0.99	42
Saar	1.0	0.8	0.8	0,7	0.5	1.94	1.27	382
Iceland	0.16	0.12	0.11	0.09	0.08	2.00	1.49	6.5

The population of Germany (24) increased between 1937 and 1955 by 30%, i.e. 2.5 times more than the other countries as a whole. This exceptional increase is a result of the influx of refugees, i.e. 11 million people.

(c) The considerable differences in population growth between one European country

(23) The increase in the Austrian population was concentrated between 1901 and 1913. Between 1913 and 1955, there was an increase of only 3%.

(24) In this Chapter, as throughout the survey, « Germany » means the 1955 territory of the Germany Federal Republic.

and another between 1901 and 1955 are reflected by substantial changes in their relative positions. A comparison of these figures, which it will be recalled relate to each country's territorial position in 1955, shows that in 1901 France was the most highly populated country in Europe. In 1913 and 1929, the United Kingdom was the only country which exceeded France. In 1955, France took only fourth place, being largely outstripped by the United Kingdom, Germany and Italy. Moreover, despite natural conditions that are particularly favourable to population growth, France has a much lower population density (78 inhabitants per square kilometre) than her neighbours: Netherlands (332), Belgium (277), United Kingdom (210), Germany (204), Italy (159) and Switzerland (121).

2. Industrial Product per Head in 1955.

Table 29 compares the industrial product per head in each country with that in Western Europe in 1955. These figures should be considered as approximate: a difference of a few points between two countries cannot be considered as significant.

The figures in Table 29 show that:

(a) Industrial product per head in the United States is almost three (2.8) times greater than the figure for Western Europe (25). It is about three quarters higher than the level achieved by the most industrialised countries of Europe, but about 20 times greater than that of Turkey.

(b) In Europe itself, there are considerable differences between one country and another: industrial product per head in countries like the United Kingdom, Sweden or Switzerland is three times higher than in Italy and eleven times higher than in Turkey.

(25) A comparison between United States and Western European industrial product per head in each industrial sector in 1955, taking Western Europe's product per head in each sector as 100, gives the following figures for the United States: food 235; textiles, basic metals and chemicals 275; metal products 350.

TABLE 29

INDUSTRIAL PRODUCT PER HEAD IN 1955

Unit: industrial product per head in Western Europe = 100

United States	285
United Kingdom	166
Switzerland	159
Sweden	152
Belgium-Luxemburg	139
Germany	134
Norway	109
Western Europe	100
Netherlands	96
France	92
Denmark	90
Austria	90
Italy	55
Ireland	55
Portugal	35
Greece	30
Turkey	15

On the basis of industrial product per head. it is possible to divide the countries of Europe into four categories:

1. *Countries whose industrial product per head is 35 to 65% above the European average.* These countries — United Kingdom, Switzerland, Sweden, Germany and the Belgium-Luxemburg Economic Union — comprise 44% of the population of Europe and account for 65% of Europe's industrial production. The industrial product per head of all these countries together is half as high again as the average figure for Western Europe and one-half of that for the United States.

2. *Countries whose industrial product per head is equivalent to the European average.* This group comprises the Netherlands, Norway, France, Denmark and Austria. These countries together account for 23% of European industrial production and for the same percentage of European population.

3. *Countries with an industrial product per head representing about one-half of the European average*: Italy and Ireland — 18%

of Europe's population — thus account for only 10% of Europe's industrial production.

4. *Countries with little industry*: Greece, Turkey and Portugal, with 14% of the total population of Europe, have a combined industrial production representing less than 3% of the European total.

3. Development of Industrial Product per Head Between 1901 and 1955.

Table 30 shows industrial product per head in the various years as a percentage of the European average in 1955, taken as an international unit.

The most industrialised European countries in 1901 (United Kingdom, Belgium and Germany) were still among the most industrialised in 1955, but had been caught up and even overtaken by Switzerland and Sweden. Great Britain, in the first rank in 1901, 1937 and 1955, was caught up in 1913 and 1929 by Belgium and Germany and in 1955 by Switzerland and Sweden. Belgium and Germany lost ground between 1929 and 1955 and by 1955 had fallen well behind Great Britain, Switzerland and Sweden. However, the relative position of Germany in 1955 was still affected by the exceptional increase in population during recent years.

In 1901 French industrial product per head was roughly equivalent to the average for Europe. In 1929 it was about one-fourth above the average, and France was then one of the highly industrialised countries, on a level only slightly below that of Great Britain and Germany. In 1937 and 1955 France returned to her relative position of 1901, i.e. the average for Western Europe; but whereas only four countries had a higher industrial product per head in 1901, France took only eighth place in 1955. France's relative position

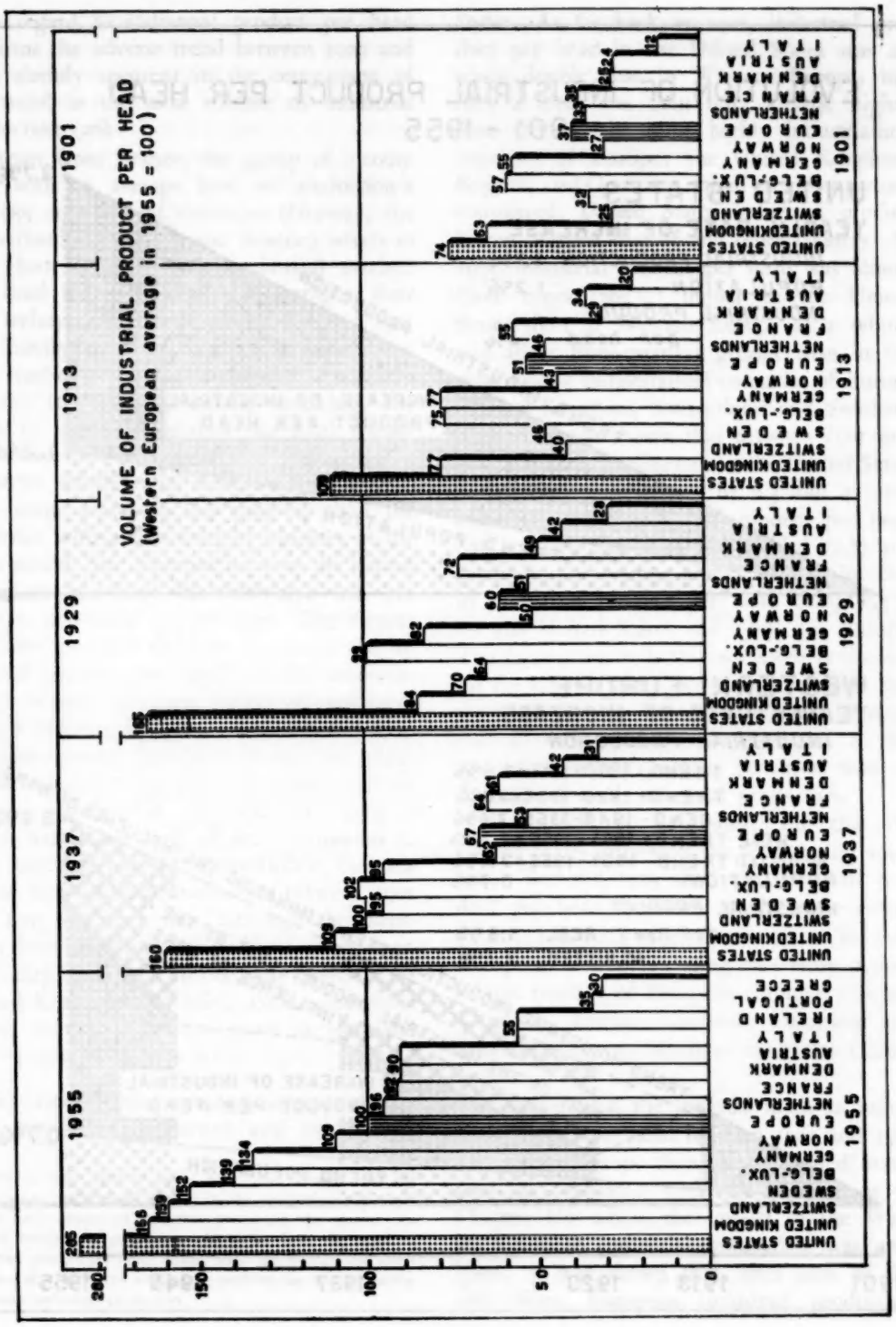
TREND IN INDUSTRIAL PRODUCTION PER HEAD — Table 30

	1955	1937	1929	1913	1901	Increases between 1929 and 1955 %	Increases between 1901 and 1955 %
	(average for Western Europe in 1955=100)						
United States	285	160	165	109	74	+ 73	+ 285
Western Europe	100	67	60	51	37	+ 67	+ 170
United Kingdom	166	109	84	77	63	+ 98	+ 163
Switzerland	159	100	(70)	..	..	+ 130	
Sweden	152	95	64	46	32	+ 138	+ 375
Belgium-Luxemburg	139	102	99	75	57	+ 40	+ 143
Germany	134	95	82	77	55	+ 63	+ 144
Norway	109	62	50	43	27	+ 118	+ 303
Netherlands	96	53	51	46	33	+ 88	+ 190
France	92	64	72	55	35	+ 28	+ 162
Denmark	90	61	49	29	25	+ 84	+ 260
Austria	90	42	42	34	24	+ 114	+ 260
Italy	55	31	28	20	12	+ 96	+ 358

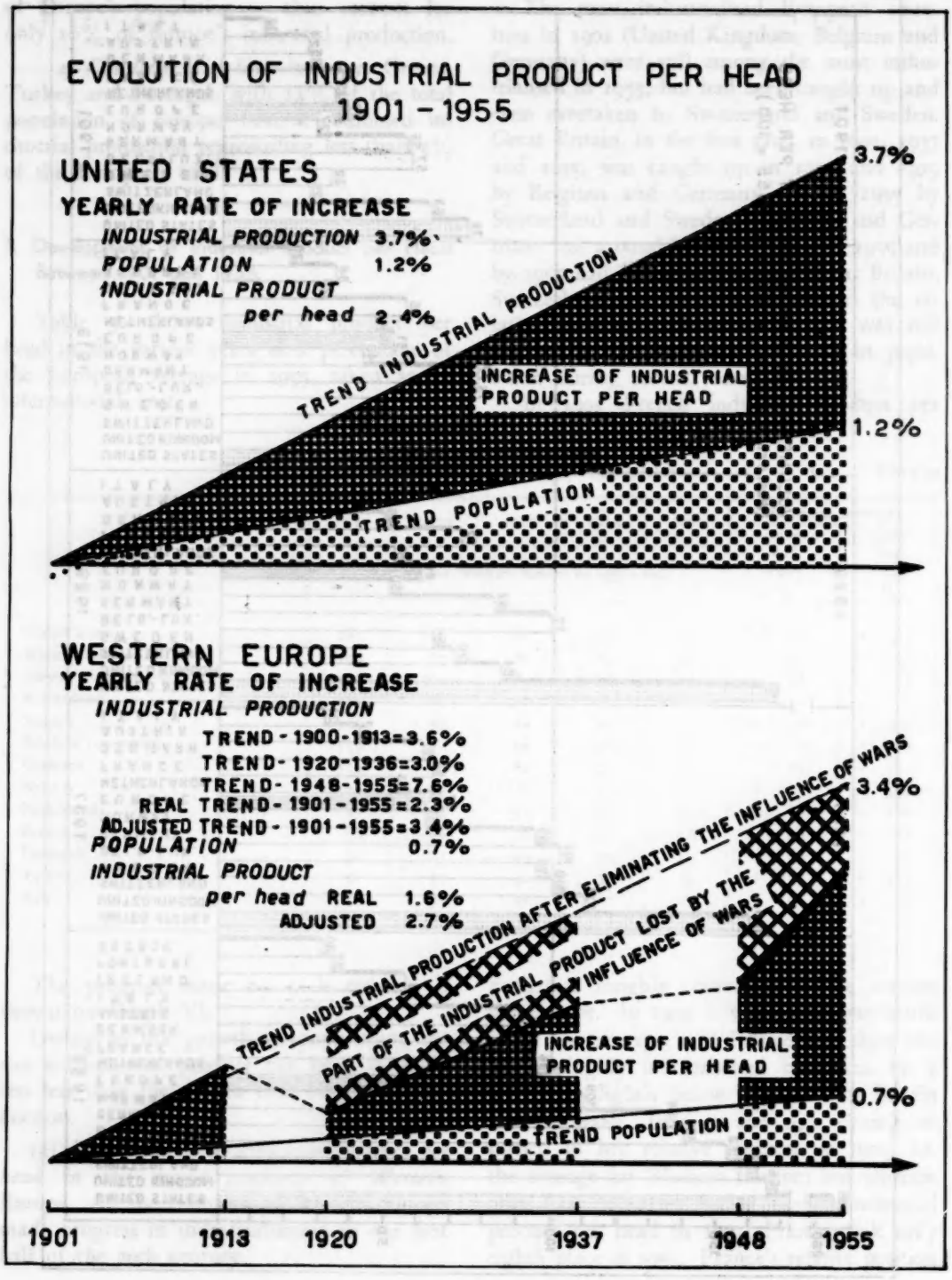
The progress made by each country is shown on Graph VI.

Owing to the growth in population, the rise in industrial product per head is much less less than the rise in total industrial production.

(a) *Development of industrial product per head in the major countries of Western Europe.* All the countries of Western Europe made progress in industrialisation in the first half of the 20th century.


VOLUME OF INDUSTRIAL PRODUCT PER HEAD
(Western European average in 1955 = 100)
1955
1937
1929
1913
1901
UNITED STATES
UNITED KINGDOM
SWITZERLAND
SWEDEN
BELG.-LUX.
GERMANY
NORWAY
EUROPE
NETHERLANDS
FRANCE
DENMARK
AUSTRIA
ITALY
IRELAND
PORTUGAL
GREECE
280
265
166
159
153
139
124
109
100
96
92
90
55
35
30
160
109
100
102
95
67
65
64
61
42
31
165
94
70
64
83
82
50
60
61
72
49
42
28
103
77
40
48
75
77
43
51
46
55
29
34
20
74
63
25
32
57
55
27
37
33
33
28
24
12
150
100
50
0

Graph VI


EVOLUTION OF INDUSTRIAL PRODUCT PER HEAD
1901 - 1955
UNITED STATES
YEARLY RATE OF INCREASE
INDUSTRIAL PRODUCTION 3.7%
POPULATION 1.2%
INDUSTRIAL PRODUCT
per head 2.4%
TREND INDUSTRIAL PRODUCTION
INCREASE OF INDUSTRIAL PRODUCT PER HEAD
TREND POPULATION
3.7%
1.2%
WESTERN EUROPE
YEARLY RATE OF INCREASE
INDUSTRIAL PRODUCTION
TREND - 1900-1913=3.6%
TREND - 1920-1936=3.0%
TREND - 1948-1955=7.6%
REAL TREND - 1901-1955=2.3%
ADJUSTED TREND - 1901-1955=3.4%
POPULATION 0.7%
INDUSTRIAL PRODUCT
per head REAL 1.6%
ADJUSTED 2.7%
TREND INDUSTRIAL PRODUCTION AFTER ELIMINATING THE INFLUENCE OF WARS
PART OF THE INDUSTRIAL PRODUCT LOST BY THE INFLUENCE OF WARS
INCREASE OF INDUSTRIAL PRODUCT PER HEAD
TREND POPULATION
3.4%
0.7%
1901
1913
1920
1937
1948
1955

Graph VII

with regard to industrial product per head confirms the adverse trend between 1929 and 1955 already apparent in the comparison of the trend in the total volume of industrial production (26).

Apart from France, the group of « countries with an average level of production » in 1955 consisted of countries (Norway, the Netherlands, Denmark and Austria) which in 1901 had a much lower industrial product per head than the European average. Italy and Ireland, whose industrial product in 1901 was hardly 1/3rd of the European average, had reached a little more than half of that average in 1955. Generally speaking, the levels of industrial product per head tended to recover between 1901 and 1955, as the countries which were most industrialised in 1901 made relatively less progress than the countries with a low level of industry at the same period. For example, between the United Kingdom and Italy the difference was 5:1 in 1901 and only 3:1 in 1955. The figures in Table 30 show that, in the main, the industrial product per head of the countries which in 1901 were most highly industrialised, trebled between 1901 and 1955, whereas over the same period industrial product per head in the countries which were less industrialised in 1901 quadrupled, and that of countries which had a low level of industrialisation in 1901 increased fivefold. Nevertheless, the raising of levels of industrialisation between 1901 and 1955 was such that, although the disparities between countries declined *in percentage*, they increased in *absolute terms*: the United Kingdom and Italy, taken as examples above, were 50 « points » apart in 1901 and 105 « points » apart in 1955.

(b) *Comparative trend in industrial product per head of Europe and the United States.* As far back as 1901, industrial product per head in the United States was already double that in Western Europe, but such a level was then only a little higher than that of the most highly industrialised countries of Europe: the United Kingdom, Belgium and Germany. In all the other periods considered, United States industrial product far outstripped that of any other country. In 1955, industrial product per head was almost three times (285%) higher in the United States than in Western Europe as a whole, and about three-quarters greater than in the most highly industrialised countries of Europe (United Kingdom, Switzerland and Sweden).

It has been shown that between 1901 and 1955 industrial production in the United States and in Europe increased by 8.3 and 4 times respectively; but industrial product per head only quadrupled (3.9) and trebled (2.7) respectively, the average annual rate of increase in industrial product per head being 2.4% for the United States and 1.6% for Europe. The figures are in both cases more favourable for the United States, but it will be noted that the difference in trend in Western Europe and the United States is much less in the case of industrial product per head than in the case of total industrial production.

It should also be pointed out that the United States only took the lead during 1901-1929. Between 1929 and 1955 industrial product per head increased to the same extent (+70%) in the United States and in Western Europe as a whole; during this same period, a large number of European countries (United Kingdom, Sweden, Norway, Denmark and Italy) made more headway than the United States.

The fact that the progress made in industrial product per head between 1901 and 1955 was less in Europe than in the United States may be compared with the conclusions to Chapter III, where the impact of the Wars on European industrial production was analysed. It was shown that, after each of the two Wars, European industrial production

(26) At first sight it might have been thought that the unfavourable situation of France in the comparison of trends in the total volume of industrial production was due to the lack of increase in population. In actual fact, the trend in industrial product per head, which takes into account the direct influence of a stationary population, confirms the relative decline in French industrial production.

was one-third below what it might have been if there had been no conflict, but that only the backlog resulting from the First World War had not been made up. The result was that the 1955 level of industrial production in Western Europe was one-third below what it would have been if two wars had not devastated Europe. If industrial production had reached this hypothetical level (i.e. one-half above the actual level) industrial product per head would have increased in Europe between 1901 and 1955 at a yearly rate of 2.8%.

Graph VII shows, for the United States and for Europe, the breakdown of the 1901-1955 increase into two parts: (a) the increase corresponding to the increase in industrial product per head, and (b) the increase due to the increase in population (on the assumption of constant industrial product per head). The Graph also shows the proportion of industrial product per head estimated to have been lost to Europe as a result of the Wars.

The difference existing in the evolution of industrial production through the period 1901-1955 between Western Europe and the United States does not result from a fundamental divergence of trends between the two areas. It is explained by the difference in the rate of population increase and the impact of the First World War.

But it is on a plane outside the scope of this study that a fundamental difference between industrial production of Western Europe and of the United States does exist: in 1955, with a volume of industrial production two-thirds higher than that in Western Europe, the United States employed an industrial labour force of less than half that employed in Europe (17.3 million compared with about 39 million). It follows from these figures that productivity per worker in industry was three-and-a-half times greater in the United States in 1955 than it was in Europe as a whole, and three times greater than in the most highly industrialised countries of Europe.

V. Paretti-G. Bloch

ANNEX 1

COMPUTATION OF THE INDICES AND COMPARISON OF VOLUMES OF INDUSTRIAL PRODUCTION

1. Computation of the Indices 1901-1955 for each Country.

For most countries, series of official or private indices are available covering, at least partly, the period from 1901-1955 (1), as well as series relating to the volume of production of the principal products during the same period.

From the varied documentation available for each country, indices of industrial production were prepared covering the whole of the period 1901-1955 and computed in such a manner as to permit comparisons over time as well as between countries.

The criteria used in compiling these indices are described below:

(a) Industrial production was defined as the product of the activity of the following divisions and major groups defined in the United Nations International Standard Industrial Classification (I.S.I.C.):

1. Mining and quarrying: Division 1.
2. Electricity, gas, etc.: Division 5.

(1) Of the 18 countries that make up Western Europe, only three — Iceland, Portugal and Switzerland — have never compiled an index of industrial production and have consequently had to be excluded from the computation of the European index. Estimates of the value of industrial production in these countries are available, however, so that their share in Western European industrial production can be determined: in aggregate these three countries represented only about 4% of European industrial production in 1955. Omitting them has therefore only a negligible effect on the trend of the indices computed for Europe as a whole.

3. Food, beverage and tobacco manufactures: Major groups 20, 21 and 22.

4. Manufacture of textiles: Major group 23.

5. Basic metal industries: Major group 34.

6. Manufacture of metal products: Major groups 35-38.

7. Chemical industries: Major groups 31 and 22.

8. Other manufacturing industries: Major groups 24-30, 33 and 39.

Major group 24: Manufacture of footwear, other wearing apparel and made-up textile goods.

Major group 25: Manufacture of wood and cork, except manufacture of furniture.

Major group 26: Manufacture of furniture and fixtures.

Major group 27: Manufacture of paper and paper products.

Major group 28: Printing, publishing and allied industries.

Major group 29: Manufacture of leather and leather products, except footwear.

Major group 30. Manufacture of rubber products.

Major group 33. Manufacture of non-metallic mineral products, except products of petroleum and coal.

Major group 39: Miscellaneous manufacturing industries.

(b) 1938 was chosen as base year for weighting because practically all European countries publish or have published an official index of industrial production based on the year 1938 or on a period very near that date.

(c) From the national data available, adjusted so that the coverage should correspond as closely as possible with the I.S.I.C. definitions, a series of indices was computed for each of the above-mentioned 8 sectors, covering the period 1901-1955. This series, base 1938 = 100, was computed by simply linking the series adopted, whatever their original weight base. The fact that for certain periods the internal weighting of the national series refers to years other than 1938 was disregarded. The sector indices thus determined may be expressed by the following formula:

$$i_{t38} = \frac{\Sigma\, p_0\, q_t}{\Sigma\, p_0\, q_m} \times \frac{\Sigma\, p_{38}\, q_m}{\Sigma\, p_{38}\, q_{38}}$$

where i is the sector index,

t the period considered,

o the weighting period for the national series covering period t,

m the link period, i.e. the period for which the index is available in both the base o and base 38 series

and 38 the international weighting period.

This formula resembles that of a Laspeyre's index if period t is covered by a national index based on 1938. In cases where period t is covered by a national index not based on 1938, the index computed with the above formula becomes a Laspeyre's index if it is admitted that a price index applied globally to the net value

$$p_{38/0} = \frac{\Sigma\, q_m\, p_{38}}{\Sigma\, q_m\, p_0}$$

of production in the sector during period t, allows for movements in the unit prices of the products covered by the index between period o and 1938.

(d) The index of total industrial production in each country was obtained by combining the sector indices, using weights proportionate to the value added of production in each sector in 1938. The index of total industrial production thus obtained can be expressed by the following formula:

$$I_{t/38} = \frac{V_A i_A + V_B i_B + V_N i_N}{V}$$

where i_A, $i_B \cdots i_N$ are the sector indices

V_A, $V_B \cdots V_N$ are the value added of the sectors A, B, ... N in 1938

and V is the value added of total industrial production in 1938.

The method used to compute the global index tends to reduce the distortion resulting from the fact that for certain periods the sector indices are weighted on a base other than 1938. The index of industrial production so computed has a value intermediate between an index $I_{t/0}$ calculated according to the weighting of year o and the index $I_{t/38}$ computed entirely on the weight base 1938.

2. Computation of the Indices of Industrial Production in Western Europe.

These indices were obtained by combining the indices for the various countries (computed as described in paragraph A), using weights proportionate to each country's contribution to the total value added of industrial production in Western Europe during the year chosen as basis of computation.

The computation of each country's share in the value added of Western European industrial production has been made according to two methods; the first leads directly to results for 1938; the second gives data for 1950. If one compares the breakdowns of European industrial production that would result for a common year — 1955 — from the results obtained by both methods, one finds that they are practically equivalent.

PURCHASING-POWER PARITY RATES OF EXCHANGE FOR INDUSTRIAL GOODS IN 1938 (a) TABLE 1

	Price index of manufactures (1929=100)	Ratio of European to United States prices (1929=100)	Exchange rate 1929 (annual average) United States cents	Exchange rate 1938 (a) United States cents	
				Parity rate	Actual rate (annual average)
	1	2	3	4	5
Austria (a)	93,2	107	14.1	13.2	18.6
Belgium	75	87	2,78	3.21	3.50
Denmark	110.5	128	26.7 (c)	18.1	21.7
France	118	136	3.92	2.87	2.86
Germany (a)	77	89	23.8	26.7	21.2 (b)
Italy	94.6	111	5.235	4.71	5.26
Netherlands	65,6	76	40.2	52.9	55.0
Norway	103	119	26.7 (c)	19.5	24.4
Sweden	90	104	26.8 (c)	22.4	25.1
Switzerland	76	88	19.25	21.9	22.9
United Kingdom (a)	83,5	96,5	485.7 (c)	437	490

(a) The exchange rates shown in columns (4) and (5) are appropriate for the conversion into United States dollars in 1938 prices of values expressed in national currencies in 1937 prices for Austria, in 1936 prices for Germany, in 1935 prices for the United Kingdom and 1938 prices for all other countries.

(b) Allowing for export premium, Registermark for Germany.

(c) The 1929 exchange rates of the pound and related currencies were held to have been over-valued by 15 per cent. To arrive at the parity rate shown in column (4), they were divided by 1.15 in each case before being divided in turn by the figures shown in column (2).

(a) *Estimation of the value of each European country's industrial production in 1938.*

The net value added of each country's industrial production in 1938 was given by the Economic Commission for Europe (2) which converted the values expressed in national currency into United States dollars, the exchange rates used being determined as follows: « The required exchange rates were calculated by assuming that, in 1929, the dollar exchange rates of European countries, with the exception of the United Kingdom and the countries of Northern Europe, correctly expressed the purchasing power of national currencies over industrial goods. The exception made for the United Kingdom was based on the well-known over-valuation of the pound sterling, which is estimated at about 15 per cent in contemporary writing. The currencies of the Scandinavian countries and Finland, on the other hand, were assumed to be in equilibrium with the pound and not the dollar. Allowance for movements in the prices of manufactures in European countries and in the United States then led to the purchasing-power parity rates shown in Table 1, where the details of the calculation and the actual 1938 exchange rates are also given ». (Economic Survey of Europe in 1948, p. 229).

Using the above-mentioned rates, the Economic Commission for Europe determined the net value of

(2) Economic Survey of Europe in 1948, p. 21.

TABLE 2

BREAKDOWN OF EUROPEAN INDUSTRIAL PRODUCTION IN 1938

	Net value added in industrial production in 1938 ($ million)	Percentage
Western Europe	21,514	100
United Kingdom	6,696	31.1
Germany	5,450 (3)	25.3
France	3,155	14.7
Italy	1,790	8.3
Belgium-Luxemburg	830	4.0
Sweden	771	3.6
Netherlands	665	3.1
Switzerland	536	2.5
Austria	400	1.8
Denmark	324	1.5
Norway	219	1.0
Greece	175	0.8
Turkey	150	0.7
Ireland	130	0.6
Portugal	110	0.5
Saar	113	0.5

(3) The figure of $ 5,450 million corresponds to the value of 1938 industrial production in the territory at present covered by the Federal Republic of Germany — the E.C.E.'s figure for the whole 1938 territory of Germany is $ 9,066 million.

the various countries' industrial production in 1938 in $ U.S. at 1938 purchasing power. According to these data, European industrial production in 1938 was as shown in Table 2:

(b) *Estimation of the value of industrial production in each country in 1950.*

The O.E.E.C. has at its disposal, for each country, evaluations of the gross national product expressed in national currencies and broken down into the chief economic sectors.

The values added in industrial production in each country in 1950 were as follows:

TABLE 3

VALUE ADDED IN INDUSTRIAL PRODUCTION OF EACH COUNTRY IN 1950

United Kingdom	£	5,029	million
Germany	DM	35,028	million
France	Frs.	2,800	billion
Italy	Lire	2,676	billion
Belgium	B.Frs.	132,000	million
Sweden	Sw.Kr.	10,455	million
Netherlands	Fl.	6,010	million
Switzerland	Sw.Frs.	9,200	million
Austria	Sch.	20,200	million
Denmark	D.Kr.	6,063	million
Norway	N.Kr.	4,731	million
Turkey	T.L.	1,165	million
Portugal	Esc.	16,243	million
Greece	New Drs.	5,696	million
Ireland	£	87	million
Luxemburg	B.Frs.	4,800	million

The conversion of all these values into a common monetary unit — the United States dollar — was based on rates corresponding, for each country, to the official exchange rate adjusted for the over- or under-valuation of the currency concerned *vis-à-vis* the U.S. dollar in the field of industrial products. This over- or undervaluation was determined on the basis of the results given in the second edition of Gilbert and Kravis « An International Comparison of National Products and the Purchasing Power of Currencies » (4) for the comparison of expenditures based on average European relative price weights (5).

The adjusted exchange rates for industrial products could be computed only for the following European countries: United Kingdom, Germany, Italy, Belgium, the Netherlands, Denmark and Norway, which accounted in 1950 for 86% of European industrial production. For the other European countries (representing only 14% of European industrial production) it was assumed that the relation between the official exchange rate and the adjusted exchange rate for industrial products was the same as the average relation computed for the eight countries mentioned above, taken as a whole.

On the basis of these computations, the dollar value of each country's industrial production and its share in Western European industrial production in 1950 were as follows:

TABLE 4

BREAKDOWN OF EUROPEAN INDUSTRIAL PRODUCTION IN 1950

	Value added in industrial production in 1950 ($ U.S. million)	Percentage
Western Europe	62,064	100
United Kingdom	20,556	33.1
Germany	11,009	17.7
France	9,372	15.1
Italy	4,879	7.9
Belgium	3,419	5.5
Sweden	(2,903)	4.7
Netherlands	2,196	3.6
Switzerland	(1,980)	3.2
Austria	(1,254)	2.0
Denmark	1,135	1.8
Norway	957	1.5
Turkey	(541)	0.9
Portugal	(739)	1.2
Greece	(380)	0.6
Ireland	350	0.6
Luxemburg	130	0.2
Saar	(264)	0.4

(c) *Comparison of the results obtained by the two methods.*

From the results obtained by the above two methods, it is possible, using the indices of industrial

(4) This second edition will be published by O.E.E.C. at the end of 1956.

(5) The European average prices, expressed in dollars, were computed for each industrial product:

(a) by converting into dollars, on the basis of the purchasing power parity computed for the gross national product, the price of the product in the country under review;

(b) by computing the weighted average of the prices, the weight being based on the relative size of each country's gross national product expressed in dollars on the basis of the purchasing power parity quoted above.

TABLE 5

EACH COUNTRY'S SHARE IN WESTERN EUROPEAN INDUSTRIAL PRODUCTION IN 1955

	According to the breakdown obtained	
	for 1938	for 1950
Western Europe	100.0	100.0
United Kingdom	30.9	29.0
Germany	24.0	23.1
France	13.3	14.6
Italy	9.1	8.9
Belgium-Luxemburg	4.0	5.2
Sweden	3.8	3.9
Netherlands	3.6	3.6
Switzerland	2.8	2.8
Austria	2.3	2.2
Denmark	1.4	1.5
Norway	1.2	1.4
Turkey	1.1	1.0
Portugal	0.9	1.0
Greece	0.6	0.8
Ireland	0.6	0.5
Saar	0.4	0.5

production for 1955, to compute each country's share in European industrial production on the basis, first, of 1938 results, and second, of 1950 results.

Both methods thus give practically the same results for the beakdown by country of European industrial production. For the needs of the present study, the breakdown adopted for 1955 is obtained by averaging the percentages found for each country in the two series above. This breakdown is shown in Table 1, page 189.

(d) *Estimations of each country's share in European industrial production, obtained by other methods.*

The results previously obtained may be compared with the indications on the breakdown of industrial production in Western Europe that emerge from a comparison of data for energy consumption in industry, steel consumption and industrial labour employed in each country.

Each country's share in Western European industrial production thus remains, on the whole, of appreciably the same order, whatever the approach chosen: direct (valuation in a common monetary unit of the industrial production of all countries) or indirect (energy or steel consumption, industrial manpower).

The differences that exist between the results obtained by the various methods correspond, allowing for the approximate nature of the figures, to real differences. For instance, the fact that Norway's share

TABLE 6

COMPARISON OF EACH COUNTRY'S SHARE IN 1955 IN WESTERN EUROPEAN INDUSTRIAL PRODUCTION AND ITS SHARE IN ENERGY CONSUMPTION, STEEL CONSUMPTION AND INDUSTRIAL LABOUR EMPLOYED

	Each country's share in Western European industrial production according to the results obtained		Each country's share in		
	for 1938	for 1950	Energy Consumption in industry	Steel Consumption	Wage earners in industry
Western Europe	100	100	100	100	100
United Kingdom	30.9	29.0	29.0	28.3	28.3
Germany	24.0	23.1	25.0	27.7	22.8
France	13.3	14.1	15.3	15.1	13.3
Italy	9.1	8.9	7.6	8.2	11.3
Belgium-Luxemburg	4.0	5.3	5.1	4.3	3.6
Sweden	3.8	3.9	3.8	4.0	2.6
Netherlands	3.6	3.6	3.1	3.3	3.4
Switzerland	2.8	2.8	1.6	1.4	2.4
Austria	2.3	2.2	2.0	2.8	2.4
Denmark	1.4	1.5	1.2	1.0	1.4
Norway	1.2	1.4	2.7	1.2	1.1
Turkey	1.1	1.0		1.0	
Portugal	0.9	1.0	2.0	0,3	6.8
Greece	0.6	0.7			
Ireland	0.6	0.5			
Saar	0.4	0.5	1.6	1.4	0,6

in energy consumption is greater than its share in the value of industrial production is due to the particular development in Norway of electrometallurgy and electrochemistry, which are heavy consumers of energy. Another example: Italy's share in industrial manpower is greater than its share in the value of production because, as is known, productivity is lower in Italy.

To determine the influence on the European index of variations in weighting, the index was computed using in turn each of the five weighting systems corresponding to the approaches mentioned in Table 6 — the indices so computed are practically identical.

3. Comparison of the Volume of Industrial Production in Western Europe and in the United States in 1955.

A comparison based on the year 1938 would be difficult and not significant, owing to the extremely low level of industrial production in the United States during that year. A comparison based on more recent

data — 1955 — has thus been tried, using the results of the above-mentioned study by Gilbert and Kravis. Two sets of estimates are obtained according to whether American or average relative European prices are used.

Using American prices,industrial production in the United States is, in 1955, 52% above the volume of Western European industrial production; when average relative European prices are used, the difference is pushed up to 85% (6).

It has been admitted that the geometric average of these two results measures approximately the real volume relationship of industrial production between the two areas. The industrial production of the United States in 1955 would then be 67% (two-thirds) greater than the volume of industrial production in Western Europe.

This result has been compared with the indications given by other data linked to industrial production.

	Western Europe	United States
Energy consumption . .	100	176 (7)
Steel consumption . . .	100	150

Data on manpower cannot be used owing to the enormous difference in productivity. The comparisons made on energy and steel consumption seem to confirm the validity of the volume relationship quoted above between American and European industrial production.

(6) At American 1950 prices, the value of United States industrial production in 1955 would be $ 111.0 billion and that of Western European industrial production, $ 73.1 billion. It is not possible to give absolute values at average relative European prices, this set of prices furnishing only weighting coefficients for the computation of a relative volume index of industrial production.

(7) If motor gasoline used by passenger cars is excluded (in order to eliminate the influence of the disproportion in the number of cars of the two areas) the ratio falls to 161.

Adjustment factors to the official rates of exchange in 1950.

The purpose of these adjustment factors is to correct the over- or under-valuation that would result from the use of the official exchange rate of the country concerned vis-à-vis the US dollar in the field of industrial products.

These adjustment factors are determined on the basis of studies made on national expenditure per head in the various countries (cf. Gilbert and Kravis « An International Comparison of National Products and the Purchasing Power of Currencies » — 2nd edition).

Expenditures for the following groups of products have been considered as expenditures for industrial products: alcoholic beverages, tobacco manufactures, clothing, fuel, light and power, household goods, transport equipment, paper and printing, producers' durables.

For each country an attempt was made to determine the real relationship (i.e. the quantity ratios) between these expenditures and the corresponding ones in the United States. Two results are obtained according to whether American prices or average European relative prices are used as weights. These two results are then compared with the ratio of the values expressed in dollars using official exchange rates. This comparison allows the determination of two adjustment factors, corresponding respectively to the use of American prices and average European prices, indicating the direction and the importance (in percentage) of the adjustment that must be applied to the official exchange rate in order to obtain, from data expressed in value, real volume relationships.

OFFICIAL AND ADJUSTED RATES OF EXCHANGE 1950
(for the conversion into US dollars of the added value in industrial production)

	Currency	Official rate of exchange	Adjusted rates of exchange			
			At American price weights		At average relative European price weights	
			Factor of adjustment %	Corresponding rate of exchange	Factor of adjustment %	Corresponding rate of exchange
United States	$ US	1	100.0	1	100.0	1
United Kingdom	£	0.357	115.6	0.309	101.8	0.350
Germany	D.M.	4.20	94.3	4.43	82.8	5.06
France	Fr. F.	350.00	110.8	316.00	82.2	428.00
Italy	Lire	625.00	114.9	543.00	79.8	786.00
Denmark	D. Kr.	6.91	105.7	6.55	90.1	7.67
Norway	N. Kr.	7.14	148.8	6.47	101.5	7.04
Belgium	B. Fr.	50.20	104.5	48.00	90.9	55.20
Netherlands	Fl.	3.80	107.5	3.53	96.8	3.93

ANNEX 2

PRODUCTION IN 1955 OF SELECTED INDUSTRIAL PRODUCTS IN WESTERN EUROPE AND IN THE UNITED STATES

	U.S.A.	Europe	U.S.A. if Europe = 100	Europe if U.S.A. = 100
Primary sources of energy (Million metric tons of hard coal equivalent)	1,352	615		45
Hard coal (Million metric tons)	446	477	93	
Lignite (Million metric tons)	3	105	3	
Coke-oven coke (Million metric tons)	68	90	76	
Crude petroleum (Million metric tons)	367	9		3
Refined petroleum products (Million metric tons)	384	104		27
Electricity - Total (Billion kWh)	625	364		58
Hydro (Billion kWh)	116	141	82	
Thermal (Billion kWh)	509	223		43
Natural gas (Billion cubic metres)	290	5		2
Iron ore (Million metric tons fe content)	54	41		76
Pig iron (Million metric tons)	72	57		79
Crude steel (Million metric tons)	106	77		73
Copper ore (Thousand metric tons cu content)	901	57		6
Copper (refined metal) (Thousand metric tons)	1,331	756		57
Lead (refined metal) (Thousand metric tons)	496	507	98	
Zinc (refined metal) (Thousand metric tons)	935	741		78
Tin (primary) (Thousand metric tons)	23	68	34	
Nickel (refined metal) (Thousand metric tons)	1	51	2	
Bauxite (Thousand metric tons)	2,500	2,350		94
Aluminium (primary) (Thousand metric tons)	1,421	526		37
Passenger cars (Thousand units)	7,920	2,450		31
Commercial vehicles (Thousand units)	1,249	750		60
Agricultural Tractors (Thousand units)		400		
Ships launched (Thousand gross tons)	73	4,201	2	
Wool yarn (Thousand metric tons)	289	750	39	
Wool fabric (Thousand metric tons)	131	391	34	
Cotton yarn (Thousand metric tons)		1,514		
Cotton fabrics (Thousand metric tons)	1,500	1,170		74
Rayon filament yarn (Thousand metric tons)	392	360		92
Staple fibre (Thousand metric tons)	179	492	36	
Man-made synthetic fibres (Thousand metric tons)	172	58		34
Wood pulp (Million metric tons)	18,900	8,700		46
Newsprint (Million metric tons)	1,400	2,400	58	
Other paper (Million metric tons)	10,250	7,500		73
Paper board (Million metric tons)	12,450	3,200		26
Sulphur and pyrites (Thousand metric tons sulphur content)	6,900	2.125		31
Plastics (Thousand metric tons)	1,671	1,053		63
Nitrogenous fertilisers (Thousand metric tons N)	1,812	2,637	69	
Potassic fertilisers (Thousand metric tons K_2O)	1.652	2,795	59	
Phosphatic fertilisers (Thousand metric tons P_2O_5)	2,195	2,942	75	
Cement (Million metric tons)	51	71	72	

ANNEX 3

INDICES OF INDUSTRIAL PRODUCTION IN MANUFACTURING INDUSTRIES

(1938 = 100)

	O. E. E. C. Member Countries																United States
	Member Countries combined	Austria	B. L. E. U.		Denmark	France & Saar		Germany	Greece	Ireland	Italy	Netherlands	Norway	Sweden	Turkey	United Kingdom	
			Belgium	Luxemburg		France	Saar										
Weight in combined index	100.0	2.07	3.34	0.19	1.73	15.97	0.41	26.35	0.88	0.66	8.72	2.85	1.03	4.07	0.65	31.08	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1901	44		50	31		54		39			33		36			49	36
1902	46		55	34		58		40			35		36			50	40
1903	46		51	38		57		40			38		37			50	41
1904	48		55	41		60		44			38		36			49	38
1905	50		59	45		60		45			42		37			53	46
1906	53		61	49		65		50			46		40			53	50
1907	56		63	50		69		52			53		41			54	50
1908	54		61	47		69		50			56		43			49	41
1909	56		65	53		72		53			54		44			53	50
1910	58		69	59		78		55			54		48			55	53
1911	62		73	62		82		61			57		51			58	52
1912	67		79	70		88		64			62		56			62	60
1913	70		80	86	40	91		67			62		60	44		66	65
1920	56		60	43	55	64		37			55		65	43		69	89
1921	48	56	53	48	43	59		47			53		49	31		44	68
1922	59	68	68	76	47	77		53			62		58	37		58	89
1923	59	68	74	71	59	82		35			67		63	41		65	98
1924	68	74	85	97	65	98		51			74		67	47		68	92
1925	72	87	85	108	67	99		60	66		81		71	48		67	102
1926	71	85	89	118	65	109		57	60	71	85	70	63	52		60	108
1927	79	93	98	134	63	103		73	67	72	80	75	65	54		74	107
1928	84	99	108	141	68	115		77	70	73	90	81	72	57		73	113
1929	87	99	111	153	73	123		76	69	74	91	85	80	64		78	127
1930	81	92	101	134	79	121		65	69	75	84	91	80	66		72	105
1931	72	77	89	118	73	105		54	70	75	75	83	63	63		66	86
1932	66	65	79	110	68	90		44	63	77	68	76	72	59		68	67
1933	72	67	82	108	77	102		51	70	82	73	71	73	61		74	78
1934	78	75	84	114	86	96		63	79	89	75	74	76	72		82	86
1935	85	82	96	112	92	94		73	92	94	87	76	85	81		91	100
1936	93	91	104	117	96	102	89	83	84	101	88	80	93	88		100	118
1937	102	100	114	145	100	109	97	93	94	103	101	89	101	99		108	130
1938	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1946	..	..	..	..	103		..	..	50	106	..	..	106	136	148	110	206
1947	..	..	118	114	115	90	..	..	64	114	..	..	125	140	155	118	226
1948	100	90	127	149	128	108	57	48	67	125	97	113	139	149	159	127	231
1949	113	121	130	139	137	117	75	72	80	141	108	128	150	155	174	136	213
1950	126	144	135	147	153	120	85	92	103	161	123	145	168	161	172	147	250
1951	139	164	157	178	154	133	111	111	117	166	140	151	181	168	185	153	268
1952	140	164	150	175	148	136	119	119	114	162	145	153	187	164	200	147	277
1953	147	166	149	157	152	133	115	130	129	175	159	169	190	166	214	157	302
1954	162	190	164	165	162	145	127	147	159	180	176	190	201	174	251	170	281
1955	178	223	180	186	163	159	141	172	169	189	190	212	209	184	276	180	302

(*) *Source*: « Industrial Statistics 1901-1955 », O.E.E.C., 1955.

MANUFACTURING INDUSTRIES

The above indices cover, in principle, divisions 2 and 3 of the I.S.I.C. They include the following major groups:

Groups 20-21-22 : Food, beverage and tobacco manufacturing industries
23 : Manufacture of textiles
24 : Manufacture of footwear, other wearing apparel and made-up textile goods
25-26 : Manufacture of wood, cork, furniture and fixtures
27 : Manufacture of paper and paper products
28 : Printing, publishing and allied industries
29 : Manufacture of leather and leather products, except footwear

Group 30 : Manufacture of rubber products
31 : Manufacture of chemicals and chemical products
32 : Manufacture of products of petroleum and coal
33 : Manufacture of non-metallic mineral products except products of petroleum and coal
34 : Basic metal industries
35-36-37-38 : Manufacture of metal products, machinery, electrical apparatus, appliances and supply; transport equipment
39 : Miscellaneous manufacturing industries

INDICES OF PRODUCTION IN FOOD, BEVERAGE AND TOBACCO MANUFACTURING INDUSTRIES

(1938 = 100)

	O. E. E. C. Member Countries																United States
	Member Countries combined	Austria	B. L. E. U.		Denmark	France & Saar		Germany	Greece	Ireland	Italy	Nether-lands	Norway	Sweden	Turkey	United Kingdom	
			Belgium	Luxemburg		France	Saar										
Weight in combined index	100.0	2.09	4.46	0.07	3.30	10.81	0.11	20.94	1.31	2.06	7.83	5.42	1.49	3.83	1.38	34.90	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1901	75		90					87			53		50			75	38 (a)
1902	76		93					89			47		52			76	. .
1903	75		86					83			57		53			76	. .
1904	76		89					88			55		50			76	47
1905	77		96					86			56		49			76	. .
1906	80		97					96			59		51			77	. .
1907	80		94					94			62		52			77	. .
1908	79		94					92			64		56			75	. .
1909	78		93					91			63		59			75	56
1910	77		97					89			60		63			74	. .
1911	81		98					99			65		68			74	. .
1912	79		100					89			64		69			76	. .
1913	83		96		58			101			73		71	48		74	66 (b)
1920	67		61		76			49			63		77	45		79	64
1921	73		72		71			63			75		69	48		77	63
1922	74		79		65			69			72		76	49		74	71
1923	67		90		74			47			82		78	49		69	76
1924	74		96		78			69			80		85	54		70	75
1925	78		96		79			77	86		83		80	55		71	79
1926	79		85		81			85	78	97	84		83	61		70	81
1927	82		87		73			93	88	97	79		84	60		73	83
1928	85		97		75	97		92	94	98	84		80	64		76	87
1929	88		103		75	102		93	96	99	89		93	71		79	94
1930	88		109		80	106		93	87	99	81		82	75		79	94
1931	87		103		78	111		88	88	99	77		77	77		80	86
1932	85		101		80	111		79	77	102	84		83	76		79	77
1933	87		100		85	106		81	80	104	84		80	74		84	81
1934	89		101		89	108		91	89	106	79		79	78		83	86
1935	94		102		94	110		93	115	108	89		88	82		89	89
1936	94		103		97	97	98	91	91	109	87		95	86		95	99
1937	99	100	104		100	96	98	101	98	107	99		99	93		99	103
1938	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1946	. .	. .	. .	. .	116	70	. .	. .	67	111	. .	84	119	125	159	115	154
1947	. .	. .	79	90	126	65	. .	. .	75	108	81	92	133	130	167	115	161
1948	102	84	90	82	139	78	91	73	74	118	95	97	138	134	181	120	162
1949	113	100	96	81	146	91	119	91	84	135	114	107	145	143	206	125	164
1950	122	118	102	83	158	108	136	103	106	153	138	117	148	142	202	129	169
1951	124	125	106	94	157	107	143	109	116	155	142	118	154	141	250	126	172
1952	127	131	109	91	154	96	155	117	115	164	149	121	154	144	243	130	174
1953	136	135	114	92	155	107	174	135	126	169	152	127	154	146	267	137	175
1954	140	132	118	94	159	107	181	141	151	157	157	132	155	148	292	139	174
1955	146	145	121	104	162	112	188	154	159	166	162	138	162	154	352	141	178

FOOD, BEVERAGE AND TOBACCO MANUFACTURING INDUSTRIES

The above indices cover, in principle, the following major groups of the I.S.I.C.:

Major group 20: Food manufacturing industries, except beverage industries
Manufacture of foods for human consumption and of related products.

21: Beverage industries
Production of distilled spirits, wines, malt liquors, soft drinks and carbonated beverages.

22: Tobacco manufactures.
Manufacture of tobacco products such as cigarettes, cigars, smoking and chewing tobacco and snuff.

Notes: (a) United States, 1899.
(b) United States, 1914.

INDICES OF PRODUCTION IN TEXTILE INDUSTRIES
(1938 = 100)

	O. E. E. C. Member Countries															United States
	Member Countries combined	Austria	B. L. E. U.		Denmark	France & Saar		Germany	Greece	Ireland	Italy	Netherlands	Norway	Sweden	Turkey	United Kingdom	
			Belgium	Luxemburg		France	Saar										
Weight in combined index	100.0	3.79	4.52	—	1.15	19.12	0.10	19.03	1.73	0.34	15.57	2.98	0.48	2.07	3.08	26.04	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1901	77		60			105		75			64		61			78	48 (a)
1902	82		77			114		80			69		60			80	. .
1903	79		70			108		71			73		60			78	. .
1904	81		70			108		87			73		60			74	61
1905	84		70			104		89			78		64			86	. .
1906	89		74			110		88			86		70			88	. .
1907	97		80			114		97			103		73			96	. .
1908	91		85			113		91			97		74			84	. .
1909	97		90			119		98			90		75			99	77
1910	93		86			121		91			82		77			93	. .
1911	101		97			119		99			89		78			110	. .
1912	110		107			122		109			101		79			123	. .
1913	109		106		63	121		103			95		83	53		127	92 (b)
1920	74		86		60	80		55			75		61	48		88	79
1921	65		72		35	63		69			72		37	36		67	81
1922	88		104		52	102		76			81		55	49		100	93
1923	80	70	101		59	101		51			85		58	56		87	98
1924	91	70	109		61	107		76			94		60	57		98	85
1925	98	109	108		52	110		82	31		105		62	54		104	99
1926	96	93	123		51	118		73	38		104		54	60		97	99
1927	104	105	142		56	119		102	42		93		58	64		104	108
1928	103	113	153		59	120		91	48		103		60	71		99	102
1929	103	99	143		69	120		85	48	40	114		69	68		99	111
1930	90	75	117		69	113		82	53	39	94		75	72		80	87
1931	81	52	107		70	96		79	56	37	80		64	64		84	93
1932	82	56	92		77	88		72	58	35	85		83	72		90	84
1933	93	59	93		89	107		83	65	40	97		84	75		97	104
1934	92	77	69		97	94		91	74	60	90		92	94		101	89
1935	95	88	104		96	96		83	77	80	92		95	93		107	109
1936	99	96	116		107	103		90	87	99	79		101	101		114	122
1937	105	100	124		102	105		92	90	106	101		110	105		117	125
1938	100	(100)	100	100	100	100		100	100	100	100	100	100	100	100	100	100
1946	. .	. .	. .	. .	91	65		. .	77	125	. .	55	103	120	142	83	199
1947	. .	. .	127	106	108	86		. .	95	139	102	87	125	125	147	89	192
1948	92	51	109	90	134	97		46	93	148	101	105	146	138	145	104	208
1949	103	77	116	84	151	96		80	105	159	104	122	169	141	156	110	173
1950	116	94	138	99	184	104		106	142	189	109	132	197	147	156	118	204
1951	120	110	138	86	166	107		117	165	188	117	139	208	148	146	118	197
1952	109	95	119	74	152	98		112	156	160	107	139	175	122	171	97	190
1953	120	101	132	88	163	100		130	169	217	115	157	190	140	178	111	191
1954	126	112	142	80	157	107		135	198	232	117	168	193	139	210	113	175
1955	124	118	150	78	148	101		143	182	244	104	172	184	135	229	110	196

TEXTILE INDUSTRIES

The above indices cover, in principle, the following major groups of the I.S.I.C.:

Major group 23: Manufactures of textiles

Manufactures engaged in processing textile fibres to prepare them for spinning; manufacturing yarn, thread, woven fabrics, knitted fabrics, laces, carpets and rugs; manufacturing garment in knitting mills; dyeing and fabrics; manufacturing oilcloth, linoleum and artificial leather; coating and waterproofing fabrics, manufacturing cordage, rope and twine.

(Rayon filament yarn and staple fibre production are included in major group 31: Manufacture of chemicals and chemical products).

Notes: (a) United States, 1899.
(b) United States, 1914.

INDICES OF PRODUCTION IN BASIC METAL INDUSTRIES
(1938=100)

	O. E. E. C. Member Countries																United States
	Member Countries combined	Austria	B. L. E. U.		Denmark	France & Saar		Germany	Greece	Ireland	Italy	Netherlands	Norway	Sweden	Turkey	United Kingdom	
			Belgium	Luxembourg		France	Saar										
Weight in combined index	100.0	2.58	5.72	1.38	—	15.35	2.08	36.42	0.06	—	9.81	0.75	0.57	2.39		22.89	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1901	35		38	24		46		28			15		1			52	41 (a)
1902	38		49	29		47		32			13		2			52	..
1903	42		56	35		54		35			15		2			54	..
1904	43		60	38		59		36			16		2			53	56
1905	47		63	43		62		39			19		2			58	..
1906	51		67	48		67		43			22		2			63	..
1907	53		70	49		74		45			22		2			63	..
1908	49		61	45		73		43			28		2			52	..
1909	54		73	53		80		46			34		3			57	86
1910	60		84	60		89		51			38		4			62	..
1911	64		91	63		99		56			38		6			62	..
1912	71		103	82		112		63			41		7			64	..
1913	76		102	97		118	70	68			42		9	64		72	94 (b)
1920	50		58	37		48	32	36			33	1	11	43		82	140
1921	40	53	44	47		48	38	44			27	3	9	25		33	66
1922	55	76	66	85		72	50	54			41	7	8	27		53	116
1923	55	81	86	77		80	40	29			49	9	21	28		77	149
1924	69	67	107	113		111	57	46			57	32	37	50		74	129
1925	74	82	94	127		119	61	58	89		71	34	43	45		67	152
1926	70	79	124	141		133	68	58	91		72	50	48	47		31	163
1927	89	94	135	163		132	74	74	94		70	58	47	45		82	153
1928	89	106	145	171		147	81	67	123		79	69	55	46		76	171
1929	96	101	153	187		151	87	73	93		87	68	64	56		86	190
1930	83	82	131	160		147	78	55	125		76	71	71	48		76	140
1931	64	57	118	140		120	61	39	115		64	61	65	41		53	93
1932	53	35	100	131		85	57	28	115		65	64	58	43		53	51
1933	64	39	102	126		98	66	36	131		69	67	61	59		74	78
1934	76	50	114	132		94	76	55	115		73	71	67	85		89	87
1935	86	60	123	125		95	82	72	101		87	74	69	90		95	115
1936	97	70	127	128		103	91	85	100		85	90	78	94		114	159
1937	109	100	152	166		125	92	90	101		96	93	89	105		126	174
1938	100	100	100	100		100	100	100	100		100	100	100	100		100	100
1946	..	..	..	..		..	11	..	24		..	72	61	105		128	215
1947	..	..	118	48		88	27	..	61		..	115	78	101		137	275
1948	92	120	142	168		112	48	33	70		86	186	99	107		152	291
1949	105	153	148	154		131	67	55	82		85	208	114	118		154	259
1950	115	175	146	167		130	72	70	95		104	233	131	121		163	331
1951	134	208	187	210		149	100	85	168		134	265	143	135		172	363
1952	142	232	181	207		157	108	94	204		150	258	152	153		177	334
1953	136	256	165	180		140	102	91	227		149	319	156	160		173	380
1954	152	305	182	189		152	106	106	233		173	373	159	159		187	311
1955	177	360	211	215		180	121	128	223		213	421	195	183		202	403

BASIC METAL INDUSTRIES

Major group 34: Basic metal industries
Smelting and refining; rolling, drawing, and alloying; and the manufacture of castings, forgings and other basic forms of ferrous and non-ferrous metals.

Notes: (a) United States, 1899.
(b) United States, 1914.

INDICES OF PRODUCTION IN METAL PRODUCTS INDUSTRIES
(1938 = 100)

	O. E. E. C. Member Countries																United States
	Member Countries combined	Austria	B. L. E. U.		Denmark	France & Saar		Germany	Greece	Ireland	Italy	Netherlands	Norway	Sweden	Turkey	United Kingdom	
			Belgium	Luxemburg		France	Saar										
Weight in combined index	100.0	1.53	2.98	0.06	1.53	16.13	0.36	28.51	0.44	0.24	6.01	3.32	0.89	5.13	—	32.87	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1901	25		34			35		21					27			27	12 (a)
1902	25		34			37		21					28			28	..
1903	27		36			39		23					28			29	..
1904	28		37			44		25					29			28	12
1905	31		40			45		27					29			34	..
1906	34		43			52		33					31			33	..
1907	36		45			58		36					34			32	..
1908	34		41			57		34					35			27	..
1909	37		45			64		36					34			30	17
1910	42		49			71		40					37			34	..
1911	46		54			82		47					39			35	..
1912	52		59			95		54					46			37	..
1913	56		62		18	98		56					48	35		43	32 (b)
1920	45		52		37	62		27					63	36		57	97 (c)
1921	33		39		24	59		34					47	24		23	60
1922	44		52		35	77		37					47	26		38	
1923	49		59		50	88		25					51	30		56	121
1924	60		71		57	120		37					50	34		56	109
1925	61		73		72	113		42	15				55	37		54	121
1926	59		71		64	129		36	13			54	44	40		46	133
1927	66		80		60	112		50	16			63	42	42		63	122
1928	76		93		70	135		65	17		70	75	59	46		63	136
1929	81		99		80	150		63	16		78	80	72	55		66	168
1930	76		91		88	146		50	15		71	100	68	57		62	123
1931	61		52		72	120		36	15		62	80	45	54		52	82
1932	50		57		53	93		24	12		53	54	53	46		50	53
1933	56		69		60	107		33	12		54	39	55	47		55	63
1934	64		70		72	100		47	23		56	43	60	60		66	88
1935	76		80		83	98		63	71		76	42	73	73		81	110
1936	88		91		88	106	82	76	52	94	90	48	86	79		95	136
1937	100	100	100		97	119	100	89	103	105	99	63	99	96		105	159
1938	100	(100)	100	100	100	100	100	100	100	100	100	100	100	100		100	100
1946	..	..	..	..	92	..	..	..	10	90	..	69	108	143		122	303
1947	..	..	147	137	116	100	..	..	19	123	..	92	129	146		135	331
1948	108	98	160	147	131	122	68	40	27	164	105	120	148	158		145	334
1949	124	152	153	151	140	144	74	65	32	192	118	139	159	167		154	299
1950	136	188	147	137	157	133	84	89	42	217	130	157	175	176		167	361
1951	155	222	173	133	171	151	106	119	50	233	142	164	193	185		179	408
1952	164	235	168	134	162	179	119	133	51	193	154	168	199	189		179	455
1953	165	206	159	132	166	163	110	138	60	212	170	191	216	176		185	520
1954	184	243	170	127	192	178	126	162	83	265	176	228	217	188		201	467
1955	212	303	200	127	199	203	136	201	94	288	201	256	219	204		226	514

METAL PRODUCT INDUSTRIES

The above indices cover, in principle, the following major groupsof the I.S.I.C.:

Major groups 35-36-37-38: Manufacture of metal products; machinery, electrical apparatus, appliances and supply; transport equipment

Manufacture of basic metal forms into finished articles such as tin cans, hand tools, hollow ware, fabricated wire products, bolts, nuts, etc. Manufacture of machinery and prime movers.

Manufacture of apparatus and supplies for the generation, storage, transmission and transformation of electric energy. Electrical appliances including household appliances. Electrical equipment for motor vehicles; radios, phonographs, electronic tubes, etc.

Manufacture and repair of equipment for transportation of passengers and freight by land, air and water.

Notes: (a) United States, 1899.
(b) United States, 1914.
(c) United States, 1919.

INDICES OF PRODUCTION IN CHEMICAL, PETROLEUM AND COAL BY-PRODUCTS INDUSTRIES
(1938 = 100)

	O. E. E. C. Member Countries																United States
	Member Countries combined	Austria	B. L. E. U.		Denmark	France & Saar		Germany	Greece	Ireland	Italy	Netherlands	Norway	Sweden	Turkey	United K'ngdom	
			Belgium	Luxemburg		France	Saar										
Weight in combined index	100.0	1.44	3.93	0.11	1.33	18.49	0.17	31.28	1.66	0.22	15.12	1.72	1.11	1.72		21.70	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1901	24										7	(a)	6			41	14 (b)
1902	26										8		6			44	. .
1903	25										9		7			42	. .
1904	27										10		7			45	17
1905	27										11		9			43	. .
1906	27										13		11			42	. .
1907	31										16		13			48	. .
1908	32										18		17			47	. .
1909	33										19		19			50	24
1910	35										20		20			51	. .
1911	36										20		24			53	. .
1912	38										22		32			56	. .
1913	40		47		26						23		39	32		59	32 (c)
1920	49		53		42			35			26		52	41		75	43 (d)
1921	45	88	49		29			45			28		35	31		50	38
1922	52	91	56		35			49			31		44	35		65	. .
1923	50	88	54		47			33			37		45	43		74	58
1924	58	104	62		56			49			42		51	48		73	59
1925	65	111	70		50			64	49		50		54	54		68	66
1926	63	115	67		55			63	42		56	68	56	59		57	74
1927	75	118	79		60			76	55		62	75	55	59		73	77
1928	81	104	85		64	96		84	56		65	78	64	62		79	83
1929	83	127	86		69	103		78	66		67	85	65	68		84	94
1930	74	112	78		73	98		57	60		66	91	85	69		80	90
1931	64	106	68		75	82		47	55		60	89	69	65		71	81
1932	64	106	69		73	83		44	47		56	91	69	60		78	70
1933	70	110	75		81	92		51	56		64	90	82	64		77	78
1934	78	109	76		89	91		58	61		77	95	70	70		97	85
1935	82	101	90		95	83		70	70		80	95	87	81		97	91
1936	91	104	103		97	96		82	75	88	89	92	86	85		99	101
1937	101	100	117		104	102		95	82	96	102	101	92	96		108	114
1938	100	(100)	100	100	100	100		100	100	100	100	100	100	100		100	100
1946	. .	. .	. .	. .	104	. .		. .	46	84	. .	. .	102	158		153	226
1947	. .	. .	125	. .	89	96		. .	59	98	86	. .	119	167		159	244
1948	110	145	145	142	101	114		58	63	98	101	123	129	189		174	252
1949	127	167	145	130	111	117		83	80	121	117	165	159	201		193	240
1950	152	206	142	124	129	127		111	94	131	140	233	213	226		225	283
1951	175	213	177	165	132	149		133	115	134	184	244	252	239		242	317
1952	171	195	187	159	119	141		135	102	130	185	257	246	236		228	319
1993	198	212	192	153	127	150		159	119	139	227	277	248	245		272	341
1954	228	249	231	166	138	168		185	167	150	284	314	302	264		298	341
1955	249	271	239	200	136	187		209	183	157	314	337	295	279		317	382

CHEMICAL, PETROLEUM AND COAL BY-PRODUCTS INDUSTRIES

The above indices cover, in principle, the following major groups of the I.S.I.C.:

Major group 31: Manufacture of chemicals and chemical products
Basic industrial chemicals, including fertilisers; vegetable and animal oils and fats; manufacture of miscellaneous chemical products, including synthetic resins, plastic materials, rayon and staple fibre.

32: Manufacture of products of petroleum and coal
Petroleum refineries, coke ovens and other manufactures of products from petroleum and coal.

Notes: (a) Netherlands - Excluding petroleum products.
(b) United States, 1899.
(c) United States, 1914.
(d) United States, 1919.

The Special Account Procedure as a Technique of Central Bank Control

A Study of Fifteen Years of Australian Experience

The Special Account procedure, a variant of variable minimum reserve ratios, was devised during the Second World War. To my knowledge, it is a unique Australian contribution to the art of central banking. It has now been in operation for fifteen years, time enough for a provisional assessment of its merits as a method of central bank control of trading bank liquidity. It is the object of this paper to make such an assessment on the basis of a study of the Commonwealth Bank's use of the technique since 1941 (*).

1. War-Time Origins.

For some years before World War II, it was increasingly being recognised in Australia that the central bank, the Commonwealth Bank, could not exercise adequate control over trading bank liquidity and the volume of bank credit by the classical methods which the Bank of England had developed for the purpose. Scope for open market operations was limited in a narrow bond market. Bank rate was a useless weapon in the absence of a short-term money market. Large seasonal and cyclical fluctuations in the balance of payments required a high degree of flexibility in monetary management. And the young central bank could not place the same reliance on voluntary trading bank co-operation as the Bank of England was able to do.

The Royal Commission on the Australian Monetary and Banking System, which thoroughly ventilated the problem in 1936-37, recommended for emergency use in Australia the device which had recently been adopted in the United States and New Zealand but had not yet been tested by experience, variable legal minimum reserve ratios. The actual recommendation was for legislation empowering the Commonwealth Bank Board, with the consent of the Commonwealth Treasurer, to require every trading bank to keep with the Commonwealth Bank a deposit of an amount not less than a specified percentage of its deposits, the percentage to be variable from time to time at the discretion of the Board within limits fixed by the Treasurer, but the requisition to remain in force for not more than six month at a time and for not more than eighteen months in any two years.

The trading banks strongly opposed the recommendation in public and in private, fundamentally because they were opposed to any effective central bank control of their credit policy. The Commonwealth Bank Board itself shied away from the Royal Commission's recommendation as too drastic and contented itself with a request to the government for a reserve power to require minimum deposits of any figure up to 7½%, or to 10% with the approval of the Treasurer, to be used only if any bank was acting in opposition to central bank policy. Legislation on these lines was

(*) The author is greatly indebted to Mr. E. F. Herbert for generous permission to draw freely, especially for some processed statistics, on his able thesis on « The Operation of the Special Accounts Procedure 1945-54 » (unpublished, University of Western Australia, February 1955); but Mr. Herbert bears no responsibility for any of the opinions expressed in this paper. All banking and other statistics in the paper, where not otherwise indicated, are taken from official sources.

approved by Cabinet in April 1938, but was never brought down before the war intervened (1).

For the first two years of the war, domestic monetary policy continued to rely on voluntary co-operation between the central bank and the trading banks. But from the beginning of 1941, the effect of mounting government expenditure on trading bank liquidity made some additional means of control seem urgent, to prevent both « secondary inflation » through expansion of bank advances and undue expansion of trading bank profits. It was in the course of consideration of this problem by the Commonwealth Bank Board and its advisers in April-June 1941 that the special account procedure was conceived. The germ of the idea originated with Mr. M. B. Duffy, a member of the Bank Board (2). It was elaborated and given practical shape by the economist of the Bank (Mr. L. G. Melville) and his staff. By September, the Treasurer, Mr. (now Sir Arthur) Fadden, convinced of the need for « a thorough scheme to curb unnecessary monetary expansion » (3), adopted the special account proposal, despite some hesitation by the Chairman of the Board and the Governor of the Commonwealth Bank. By threatening to use compulsion, if necessary, he secured a voluntary agreement by the trading banks to accept the special account plan, together with other arrangements for the limitation of war-time profits. Before this agreement was given final form, however, the Government fell and was replaced by the Curtin Labour Government which, without further ado, embodied the substance of the voluntary agreement in National Security (Banking) Regulations issued on November 26, 1941 (4).

(1) L. F. Giblin, *The Growth of a Central Bank*, M.U.P., 1951, Chs. 8 and 9.

(2) The author is indebted to Mr. L. G. Melville for information on this and other points relating to the origins of the special account procedure.

(3) Giblin, *op. cit.*, p. 282.

(4) National Security (War-Time Banking Control) Regulations, *Commonwealth Gazette*, 26th November, 1941; reprinted in Giblin, *op. cit.*, App. C.

The clauses of the regulations relating to special accounts required every private trading bank to lodge in a special account with the Commonwealth Bank such part of its surplus investible funds as the Commonwealth Bank might direct, « surplus investible funds » being defined as the excess at any time of assets in Australia over their average amount in August 1939. Withdrawal from special accounts was to be subject to the consent of the Commonwealth Bank which was to pay interest on special accounts at such a rate (not exceeding a maximum to be fixed by the Treasurer) as to prevent bank profits rising above the average for each bank of the three pre-war years. The procedure adopted for calls to special accounts was for each trading bank to furnish to the Commonwealth Bank within a fortnight of the last Monday of each month a statement of its average assets for the Mondays (5) of that month and for the Commonwealth Bank to inform each bank as soon as possible of the amount which it was required to lodge by the end of the following month, i.e. the month in which the call was made.

The principle of the new device was essentially the same as that of variable legal minimum reserve ratios. The central bank was given legal power to limit the liquidity of the trading banks by requiring them to deposit part of their cash in frozen accounts with itself. But there was a number of differences, some merely technical, others of substantial significance.

1. - In the first place, a minimum reserve ratio power would have enabled the central bank immediately to reduce trading bank liquidity from its initial level; the special account procedure merely enabled it to prevent trading bank liquidity from increasing above the base (pre-war) level. At the time of its adoption, this was regarded as an advantage, rather than a deficiency, of the special account device. One of the trading banks' arguments

(5) The weekly balancing date was changed in 1948 to Wednesday.

against the Royal Commission's recommendation for variable minimum reserve ratios had been that it would compel them to contract advances immediately. The new procedure deprived them of this debating point but did not handicap the central bank since, at this stage of the war, it was quite certain that trading bank assets, and with them the amount callable to special accounts, would greatly increase under the impetus of central bank finance of government war expenditure. At the same time, it is worth noting that, while the minimum reserve ratio system could be effectively used whatever the circumstances in which it was initially adopted, the special account procedure could be effective only because it was introduced at a time of impending substantial increase in the money supply.

2. - Secondly, under the reserve ratio system, minimum reserves were expressed as a percentage of trading bank deposits. With a fixed minimum reserve ratio, therefore, only part of any increase in trading bank liquidity arising from an equal gain of deposits and cash (whether on account of an improvement in the balance of payment or an increase in central bank financed government expenditure) would be automatically offset by a rise in minimum reserves. Under the special account procedure in its original form, the whole of any such increase in trading bank liquidity (indeed, the whole of the increase in trading bank cash balances) became callable. Another way of putting the same point is to say that the reserve ratio power was related to the *average* change in trading bank liquidity, the special account power to the *marginal* change. This difference was, in a sense, purely technical. Provided the central bank had power to *vary* minimum reserve ratios freely, it would always have been able to raise its reserve ratio requirement to the extent necessary to immobilise 100% or more of any increase in trading bank cash balances. But during the war years, when the central bank wanted to freeze virtually all the additional cash accruing to the trading banks, it was convenient to be able to define the amount to be lodged simply as the amount legally callable, instead of having to make frequent and seemingly arbitrary changes in minimum reserve ratios. In the post-war period, when the amount called diverged widely from the amount legally callable, this advantage of the special account procedure ceased to be significant.

3. - Another aspect of the preceding point was that, in its original form, the special account procedure placed virtually no upper limit on the amount of pressure on trading bank liquidity which the central bank was legally free to impose, while under the reserve ratio technique the central bank's power to raise the ratios was usually limited by law (in the United States to twice the normal ratio, in the Royal Commission's recommendation in the manner quoted above; in New Zealand, on the other hand, the law laid down no limit). On the face of it, the special account power was quite narrow in its scope since the amount callable was limited to the excess of trading bank assets over the pre-war level. With the large war-time and post-war rise in the money supply and in trading bank assets, however, the limit became quite academic. From the point of view of the central bank, all that mattered was that it should be able to neutralise the whole of any sharp rise in trading bank liquidity and to reduce trading bank liquidity, when necessary, by a small percentage. Provided limits on its power to call did not interfere with this need, it had no interest in a completely free hand. The trading banks, however, as we shall see, later came to regard the virtually unlimited power of the central bank to reduce their loanable funds as a serious threat and secured the imposition of legal limits in 1953.

4. - A fourth and more important difference was that minimum reserve ratios were normally uniform for all trading banks, whereas under the special account procedure the Commonwealth Bank was free to vary its calls from bank to bank. In the pre-war discussions, the difficulties of central bank con-

trol arising from widely differing circumstances and policies of individual trading banks had frequently been emphasised. The flexibility of the special account procedure in this respect, therefore, promised to be an important advantage. We shall see later that the political need to find an « equitable » basis for calls has somewhat limited this advantage in practice.

5. - A minor technical difference between the special account procedure in its original form and the usual minimum reserve ratio power was that the latter related the amount callable to trading bank deposits while the former related it to the trading banks' Australian assets. The difference, which was later eliminated, had no great practical importance. It meant that the amount callable was increased by an increase in a trading bank's shareholders' funds (e.g. by a share issue or addition to its published reserves) which would not otherwise have been the case. On the other hand, an improvement in the balance of payments was not so quickly reflected in the amount callable since an increase in Australian export proceeds immediately increases the deposits and *overseas* assets of Australian trading banks but their Australian assets (and liquidity) only after a lag of some weeks.

6. - Another minor difference was that, under the minimum reserve ratio system, the trading banks' minimum balances were held in their ordinary « bankers' » or « clearing » accounts with the central bank and did not earn any interest. The Australian procedure provided for the opening of « special accounts », distinct from the trading banks' current accounts with the central bank, and for the payment of a small rate of interest on special account balances. This was not a difference inherent in the two techniques since there is nothing to stop a central bank paying interest on minimum balances under the reserve ratio system (6). In Australia, the payment of interest provided the Commonwealth Bank with a convenient instrument for the control of trading bank profits, while yielding to the trading banks a not insignificant income — at the peak in 1951 the Commonwealth Bank paid the trading banks about £ 2.5 million in special account interest. On the other hand, the payment of interest had the disadvantage that it lent some specious support to the popular misconception that the central bank was « borrowing » the amounts held on special accounts from the trading banks, an absurd notion which was later to assume some political significance.

7. - An advantage of the special account procedure over variable minimum reserve ratios to which some importance was attached at the time of its adoption by the Commonwealth Bank Board was that calls on the trading banks could be made quietly by direct notification, while changes in prescribed minimum reserve ratios would require public announcements with all the attending publicity. This again was not an essential difference; for, though the U.S. Federal Reserve system could hardly dispense with a public announcement of a change in the minimum reserve requirement to its thousands of member banks, there was no obvious reason why the few Australian trading banks could not have been notified of such a change as quietly as of calls to special accounts (7). Public announcement might even have been regarded as a positive merit for its psychological effects, on the principle of the Bank of England's use of changes in bank rate.

8. - A point in favour of the special account procedure which, according to Giblin, was stressed at the time of its adoption was its availability as an instrument of credit expansion after the war. « The central bank would release these deposits to the trading banks at

(6) Cf. the recommendation by the recent New Zealand Royal Commission on Monetary, Banking and Credit Systems, *Report*, Government Printer, Wellington, 1956, para. 974 (d).

(7) Another reason why public announcement of changes in minimum reserve ratios might be insisted upon (*e.g.* by Parliament) is that such changes are (by contrast to calls to special accounts) not apparent from the banks' published returns of assets and liabilities.

its discretion so far as they were genuinely needed for bank advances. This arrangement once working might be continued into peace-time without disturbance. It would not involve unpopular and provocative action by the Bank, which would act only as the beneficent releaser of credit as it was required in post-war reconstruction. There seemed therefore a good prospect of such an arrangement being allowed to continue indefinitely into peace-time and so establish for the first time effective central bank control under normal conditions » (8). It is hard to see why this should have been regarded as an advantage of special accounts over variable minimum reserve ratios, even when allowance is made for the fact that the Second World War was then generally expected to be followed, like the First, by a serious depression. It would presumably have been no more difficult for the central bank to reduce minimum reserve requirements from their war-time peak than to release funds frum special accounts. Giblin's account is interesting nonetheless for showing that right from the beginning the inventors of the special account procedure thought of it, not merely as a war-time device, but as a permanent technique of central bank control.

9. - Finally it should be mentioned that the special account power applied only to the private trading banks. The exemption of the small State banks which was necessitated by the Commonwealth Constitution was not a serious matter. The exemption of the general banking division of the Commonwealth Bank, which was not then separated from the central bank, was presumably justified on the simple ground that there was no need for the Commonwealth Bank to impose this form of control on itself, but this was another matter which was to cause political trouble.

It is not suggested that all the differences between the special account procedure and variable minimum reserve ratios, which have been listed, were consciously in the minds of those who opted for the former rather than the latter in 1941. The authors of the device favoured it mainly as a highly flexible and effective instrument of war-time central bank control of trading bank liquidity which had the added merits that it met some of the trading banks' banks' objections to variable reserve ratios, that it could be operated without fuss and publicity, and that it might be capable of permanent peace-time use.

The initial lodgments in special accounts required of the trading banks when the regulations came into force in November 1941 were less than the accumulated increase in their assets over the pre-war level. Since August 1939, trading bank deposits had risen by £ 55 million, but the Commonwealth Bank required them to lodge only £ 20 million to allow for their low liquidity at the outbreak of the war. Thereafter, however, until the end of the war, virtually the whole increase in trading bank assets was called to special account from month to month, while the decline in their advances was offset by a corresponding rise in their holdings of government securities. By June 1945, the deposits of the private trading banks had increased by £ 265 million over their pre-war level of £ 318 million and their balances in special accounts stood at £ 234 million (9).

In these conditions, the procedure worked extremely simply. The trading banks knew they were required to lodge each month the full amount callable, unless the central bank notified them otherwise. Withdrawals in small amounts were permitted on a few occasions to enable banks to meet temporary cash requirements of depositors, but in each case on condition that the amount withdrawn was restored by an agreed date. Interest was paid on the daily balance on special account at the rate of ¾ %. Although the rate had originally been fixed as part of the official policy of stabilising trading bank profits, it was not altered until 1947, nor was any attempt made

(8) *Op. cit.*, p. 281.

(9) For a brief account of war-time central banking operations, see J. S. G. Wilson in R. S. Sayers (ed.), *Banking in the British Commonwealth*, O.U.P., 1952, pp. 65 ff.

to adjust it to the varying levels of profits of different banks (10). The technique of central bank control worked well during the war. To quote Giblin again, « the trading banks recognised broadly the necessity of some such procedure in wartime and seem to have been satisfied that the Bank's administration of the regulations was on the whole careful, fair and reasonable » (11).

The war-time special account procedure, together with all other central banking powers conferred on the Commonwealth Bank by the regulations of 1941, became part of the new peace-time system of central banking for Australia through the Labour Government's banking legislation of 1945. It had become apparent by this time that the major problem for monetary policy, at any rate for some years after the war, would continue to be control of inflation and that, in particular, the large accumulation of frozen funds in special accounts could not be allowed to swell the liquidity of the trading banks. The Government was, in any case, determined not to miss the opportunity of establishing at last an effective system of central bank control. As the Federal Treasurer, Mr. J. B. Chifley, pointed out in his second reading speech on the Banking bill, the Royal Commission had « recognised that the Commonwealth Bank had developed into a central bank. But the commission believed that certain extensions of the powers and functions of the bank were required to enable it to carry out its responsibilities » (12). The new powers undoubtedly went beyond those envisaged by the Royal Commission. But their efficient operation during the war seemed to make their extension the simplest method of reform.

The trading banks did not see things in this light. While they had been prepared to accept the war-time system of control as a matter of patriotic duty, they were quite unreconciled to the need for anything like as drastic central bank powers in peace-time. They conducted a strenous public campaign against the 1945 legislation, not least against the special account procedure which, according to one of them, meant that « the trading banks are to have their business pegged at their pre-war levels » and which « threaten the interests not only of the trading banks, but of the general public as well » (13). Their uncompromising hostility to the 1945 legislation, and especially the reference, in the legal challenge to section 48 of the Banking Act in 1947, to the special account power as one of the features of the legislation whose constitutional validity might be questioned, were major motives for the Chifley Government's ill-fated decision of 1947 to abandon further attempts to conduct monetary policy through a central bank controlling a private trading banking system and to proceed to outright nationalisation of the private trading banks.

The form in which the special account procedure was embodied in the Banking Act of 1945 was unchanged, except that the maximum amount callable was defined as the amount standing to each trading bank's credit in its war-time special account on August 21, 1945, plus the increase (if any) in its assets over their average in the month preceding the commencement of the relevant sections of the Act, i.e. July 1945 — thus cancelling the small uncalled liability that had accumulated during the war years — and that the maximum rate of interest payable on special ac counts (7/8%) was now written into the Act.

2. Post-War Transition, 1945-47.

It was one thing for the central bank to be equipped with a new and powerful instrument of peace-time control over trading bank liquidity; it was quite another to develop a technique of using the instrument for the purposes of peace-time monetary policy. The two years of transition from war to peace economy, 1945-47, represented for the Com-

(10) Cf. Giblin, *op. cit.*, pp. 313f.
(11) *Ibid.*, p. 323.
(12) Quoted J. S. G. Wilson, *op. cit.*, p. 82.

(13) *The Banking Bills*, unsigned and undated leaflet (Bank of New South Wales, 1945), p. 2.

monwealth Bank a period of cautious experimenting in the peace-time operation of the special account procedure.

Like most other countries, Australia emerged from the war in a condition of severe potential inflation. The great wartime expansion of the money supply had left both the public and the banks in a highly liquid condition, though most of the banks' war-time accumulation of funds was immobilised in special accounts. Business and consumers were anxious to use their funds to make good the war-time depletion of equipment and stocks. Private enterprise and public authorities were eager to embark on extensive new investment programmes. Moreover, world shortages of commodities and manufactures promised rising prices for Australia's exports coupled with difficulty in procuring supplies of imports. The existing inflationary potential, therefore, was likely to be reinforced by pressure from domestic investment demand and a favourable balance of payments. In the first two years after the end of the war, however, the war-time system of direct controls was largely maintained intact and the immediate preoccupation of the Government was to achieve the reconversation of the economy and the expansion of civil production with the least dislocation and unemployment.

The problem for the central bank was to permit adequate bank finance for this reconversion and expansion but to avoid additional inflationary pressure from undue increase in bank credit. The trading banks would be able to finance some revival of advances from their war-time accumulation of government securities and treasury bills, but this source of funds might not be sufficient and would, in any case, run out. Clearly, the simple war-time expedient of calling to special accounts all increases in trading bank assets was no longer feasible. It would henceforth be necessary to judge how much of the maximum amount callable to call (or release).

Between June and August 1945, the first substantial releases from special accounts were made, totalling some £20 million, to compensate the trading banks for a similar withdrawal from deposits. But in the early months of 1946, following the export season, new calls were made. Over the financial year (July 1-June 30) 1945-46, special accounts increased by £18 million, representing approximately two-thirds of the increase in trading bank assets over the year. Rising advances absorbed most of the remainder of the increase in trading bank funds; trading bank holdings of government securities continued to increase until June 1946, financed largely from a reduction in their treasury bill holdings.

In the following year, 1946-47, advances increased rapidly, by £65 million or 24%. But the increase in Australian assets of £18 million was almost wholly offset by a rise of £16.5 million in special accounts. Funds for the expansion of advances came from trading bank sales of government securities, holdings of which fell by £68 million over the year. The policy of the central bank clearly was to syphon off, by calls to special accounts, the additional funds accruing to the trading banks and to compel them to finance the growth of advances from sales of securities. As in the previous year, calls to special accounts were not spread evenly over the year but were adjusted to the seasonal movement in bank liquidity, releases from June to September being more than offset by calls from October to June.

Judged by its immediate objectives, this policy was entirely successful. The demobilisation of the war economy was accomplished with very little disturbance, civilian production rose rapidly and, with the help of continuing direct controls, wage and price stability was well maintained.

3. Post-War Inflation, 1947-51.

During 1947-48, the problems confronting the monetary authorities grew much more difficult. Towards the end of 1947 it became apparent that the economy « showed disquiet-

ing signs of inflationary pressure » (14). The export boom was getting under way and overseas capital was beginning to flow in, with the result that overseas funds rose by £ 59 million or 27% over the year. Domestic private and public investment expanded at an increasing rate partly in response to the developing migration programme. While inflationary pressures were thus increasing, the war-time system of direct controls which had hitherto helped to keep them in rein was fast disappearing. With the defeat of the price control referendum of May 1948, and the consequent transfer of price control from the Commonwealth to the States, its efficacy further declined and wage stability became correspondingly more difficult to maintain. During 1947-48, retail prices rose by 6% as compared with 1.5% in the previous year.

At the same time, while monetary policy was being burdened with increased responsibility for controlling inflation, the policy of the preceding two years, of compelling the trading banks to finance the expansion of advances from sales of securities, ceased to be practicable as the banks' war-time holdings of securities ran out. If advances were henceforth to be allowed to expand at all, it was necessary to allow the banks' credit base to increase by relaxing special account pressure. And to prevent all further rise in advances was clearly impossible. Industry's requirements for working capital (to say nothing of fixed capital, for much of which it also traditionally depended on the banks) were rising not only with an expanding volume of production but also with rising export and import prices. In principle, policy should have aimed at limiting the rate of growth of advances to that needed for these two purposes. In practice, however, every rise in domestic costs and prices, even when it was itself the result of inadequate control of excess demand, further increased the « legitimate » credit requirements of business which could not be refused without risk of hampering production and possibly causing unemployment. Add to this that, at any given time, the monetary authorities had to make the best guess they could about developments over the next six months, and it is clear that to find the appropriate special account policy was no easy task.

The central bank's problem was further complicated by the widely different policies which the several trading banks had pursued in the first two post-war years and the widely divergent positions in which they now found themselves. By the end of 1947, the private trading banks' holdings of treasury bills and government securities had fallen from £ 164 million in June 1945 to £ 73 million. But of these £ 73 millon, nearly two-thirds were held by the two Sydney banks, the Bank of New South Wales and the Commercial Banking Company of Sydney, while most of the major Melbourne banks, and particularly the three London head office banks, had almost completely disposed of their war-time holdings. The reason was that these Melbourne banks had been pursuing much more aggressively competitive advance policies, presumably in part because they were trying to counteract a tendency for their share of banking business to decline (15).

Whatever the reason, several of the Melbourne banks, unable to meet their customers' demands for advances by further sales of securities, now applied to the Commonwealth Bank for releases from special accounts. These requests were refused on the ground that it « would have defeated the purpose for which the Special Account procedure was instituted if the central bank had further relaxed its Special Account policy in order to enable the banks to continue a rapid expansion of ad-

(14) Commonwealth Bank, *Annual Report, 1948*, p. 24.

(15) Between June 1946 and June 1947, the deposits of the *Wales* and *C.B.C.S.* rose by 5% and 4% respectively, their advances by 21% and 13% respectively; the deposits of the *Australasia* and *National* rose by 0.6% and 2.5% respectively and those of the *Union* fell by 0.6%, while the advances of *Australasia* and *National* rose by 0.6% and 2.5% respectively

Between June 1946 and June 1948, the deposits of the *Wales* and *C.B.C.S.* rose by 15%, their advances by 45% and 29% respectively; the deposits of the *Australasia* and *E.S. & A.* rose by 9%, their advances by 61% and 153% respectively.

vances » (16). The Bank conceded, however, that the special account procedure needed to be administered with reasonable flexibility since « (a) current demands for advances are frequently the result of decisions made many months earlier and (b) a rigid limitation of funds may involve the refusal of legitimate finance for an eminently desirable purpose » (17).

The central bank, therefore, decided to deal with the situation in two ways: first, by calling to special accounts a smaller proportion than hitherto of further increases in trading bank assets, and secondly, by offering temporary advances to those trading banks which found themselves hard pressed for funds.

The new special account policy was clothed in a working rule which was developed during 1947-48. It involved calling to special accounts such proportion of the increase in trading bank assets from month to month as to keep the ratio to deposits of Special Accounts plus Cash plus Treasury bills (SACT) at a particular figure, initially of about 50%. A special account policy aimed at keeping the SACT ratio at 50% meant, in effect, that about one-half of any increase in a trading bank's funds was left to it for investment in advances or securities, while whatever part of the other half it did not choose to hold in cash or treasury bills was immobilised in special accounts. If the severity of special account pressure is measured by the ratio of special account balances to the maximum callable at any time, an equal SACT ratio for all banks also implied a higher « severity ratio » for banks without treasury bill holdings than for those which still held significant amounts in treasury bills (18). But this is an instance where the « severity ratio » is a misleading measure; for the banks with treasury bills, and therefore with a lower « severity ratio », were left with no more funds for expansion of advances than the others and, if the policy was strictly applied, could convert their treasury bill holdings only into cash or special accounts. Actually, there is a suggestion in the statistics that the SACT ratio at which the central bank aimed in its special account policy was somewhat lower for the banks with more conservative advance policies, especially the Commercial Banking Company of Sydney, than for those in more need of restraint. Also, the SACT ratio target did not remain at 50%. As the inflationary boom continued and gathered momentum during 1949, 1950 and 1951, the target ratio was gradually raised to over 55%, so as to increase special account pressure on trading bank liquidity.

The evolution of the SACT ratio represented a notable stage in the development of special account technique also in another respect. In addition to serving as a target for the degree of special account pressure on the banking system as a whole, it also served as a criterion for the distribution of special account calls among the individual trading banks. Under its special account power, the Commonwealth Bank was legally free to discriminate at will between the various trading banks. In practice, however, it found it necessary, for political reasons in the strained atmosphere between the private trading banks and itself, if for no others, to make calls on individual banks, generally speaking, on the basis of some criterion of distribution which could be defended as equitable. During the war years when the Bank simply called all that it was legally entitled to call, this represented no problem. But once its policy required an independent judgment of how much to call, its freedom to discriminate between individual banks was broadly confined to a choice between a number of possible criteria of « uniform » or non-discriminatory treatment. No such criterion is discernible in its policy during the first two post-war years when calls seem to have been made from

(16) Commonwealth Bank, *Annual Report, 1949*, p. 31.
(17) *Ibid.*
(18) The first commentator to use « severity ratios » was R. R. Hirst in *Post-War Monetary Policy in Australia*, « Economic Record », May 1953; they have also been calculated by Mr. E. F. Herbert, *op. cit.*, but in his case at least, the maximum amount callable is defined as excluding the base amount as of August 21, 1945.

month to month on the basis of an ad hoc examination of the current and prospective balance sheet position of each trading bank. But from 1948 until 1952, the SACT ratio served this purpose (19).

The decision in 1947 to offer the trading banks short-term loans was a new departure in Australian central banking. There had been isolated occasions in the inter-war period when a trading bank had borrowed from the Commonwealth Bank (20). But the general view, based on strong expressions of opinion by the trading banks themselves, had been that the trading banks would refuse to risk the dependence on the central bank which borrowing from it might entail (21). In the years 1947-51 only the two Sydney banks stuck to this principle. The other banks took advantage of central bank credit far beyond the central bank's intention.

The object of the Commonwealth Bank's offer, as we have seen, was to help out of temporary liquidity difficulties those trading banks which had sold out their security holdings. Central bank loans were intended as a « device which, while giving the trading banks time to bring their lending policies into line, would maintain pressure on them to do so » (22). The pressure was to be applied by charging « a rate of interest (at first 3%, then 3½%) which it was hoped would be sufficiently high to provide an incentive to prompt repayment » (23). As it turned out, the rate did not have this restraining effect. Several of the banks borrowed steadily and extensively from 1947 until January 1952 when central bank loans outstanding reached a peak of £68 million.

It is clear in retrospect that the central bank miscalculated in assuming that a rate of 3% or even 3½% would have a penal effect. With the standard overdraft rate at 4½%, the margin of 1% on borrowed funds invested in advances was probably more than sufficient to cover the marginal cost of advances. The trading banks, moreover, may have been willing, in their frantic competition for advance business, to bear a small loss on marginal business rather than forgo the goodwill of customers, particularly at a time when their booming overseas exchange business was yielding high profits. The Commonwealth Bank, on the other hand, may have been deterred from raising the rate above the relatively easily justifiable level of 3½% (the bond interest forgone by banks selling government securities) by fear of reinforcing the clamour raised on behalf of the trading banks that the Commonwealth Bank was « borrowing » trading bank funds at ¾% (in special accounts) and lending them back to the banks at ½%, a ludicrous argument which, however, impressed politicians, newspaper editors and others ignorant of banking technicalities.

So much for the central bank's special account policy during the years of the post-war boom and inflation. From 1947 onwards, quantitative control of trading bank credit was reinforced by qualitative control through central bank directives on advance policy, designed mainly to discourage reliance on bank credit for long-term investment in fixed capital and to ensure priority for what were regarded as the more essential lines of production (24).

The economic developments of the years of inflation can be summarised in a few statistics. Between 1947-48 and 1950-51, the value of Australian exports rose from £454 million to £1,035 million. Private capital

(19) The ratio was not entirely uniform for all banks in every month. It has been suggested that it was deliberately allowed to vary in favour of banks having « special commitments » (J. S. G. Wilson, *The Operation of Australian Central Bank Controls*, « Quarterly Review », Banca Nazionale del Lavoro, January-March 1952, p. 32). But slight divergences, in the SACT and later ratios, may also be accounted for by the fact that the central bank must determine its calls, on the basis of information relating to each bank's assets (or deposits) in the preceding month, before it knows the bank's figures for the month in which the call is made.

(20) Cf. Giblin, *op. cit.*, pp. 25, 168 n., 173, 180, 248.

(21) *Ibid.*, p. 222.

(22) Dr. H. C. Coombs, *The Development of Monetary Policy in Australia*, E.S. & A. Bank Research Lecture, 1954, Queensland University Press, 1955, p. 14.

(23) *Ibid.*

(24) For accounts of qualitative advance controls, see Hirst, *op. cit.*, pp. 12ff. and Appendix; Coombs, *op. cit.*, pp. 18f.

inflow amounted to £557 million. Overseas funds increased from £274 million to £843 million. Gross private investment rose from £450 million to £828 million, public investment from about £120 million to £289 million. The Australian assets of the private trading banks rose from £720 million in June 1947 to £1,303 million in June 1951.

The immediate effect of the new special account policy in 1947-48 was a substantial relaxation of pressure on trading bank liquidity (the « severity ratio » dropped from an average of 65% in 1946-47 to an average of 30% in 1947-48), but in the following years pressure was somewhat increased as the SACT target ratio was raised. By May 1951, special account balances reached the huge total of £576 million. They had become the trading banks' largest single asset, equal to 43% of their deposits. Of the increase of £583 million in trading bank assets between June 1947 and May 1951, £301 million (or 51.6%) had been immobilised in special accounts. This is the measure of the direct disinflationary effect of the special account policy over these years. But the £282 million additional funds left at the disposal of the banks, together with some £60 million of central bank loans, enabled the banks to expand advances over the same period by £207 million or by 71%.

Monetary policy had certainly failed to prevent inflation. Between 1946-47 and 1950-1951, the value of money, measured by the C-series index of retail prices, fell by one-third. At its peak, open price inflation reached an annual rate of nearly 30%. It was brought to a halt, not by domestic measures of budget or monetary policy, though these helped, but by a huge swing in Australia's balance of payments, the combined effect of a steep fall in the price of wool and a flood of imports, which converted a surplus of £104 million in 1950-51 into a deficit of £583 million in 1951-52.

The fault, of course, did not lie primarily with monetary policy. No measures of domestic policy would have protected Australia from the impact of inflation overseas and the Korean boom in commodity prices, though an appreciation of the £A might have had a useful insulating effect. Even the domestic boom in private and public investment required more than purely monetary measures of control, particularly a more courageous disinflationary budget policy, greater restraint and co-ordination in public works programmes, and probably the retention through this period of some of the direct controls of the war and immediate post-war years.

But it has also been recognised since then that a more stringent monetary policy would have been desirable (25). Some of the reasons why monetary weapons were not used more effectively have been discussed before, in particular the fear of interfering with the « legitimate » needs of business for bank credit and the central bank's miscalculation in its loans to trading banks. Another obstacle to an effective policy of monetary restraint was the retention through the years of inflation of the war-time policy of cheap money. It is questionable whether higher interest rates, within a practicable range, would in themselves have done much to restrain investment or stimulate saving. But a policy which committed the central bank to support a given level of bond prices, if necessary by pumping large quantities of new money into the economy, was incompatible with any effective control of the money supply. The problem was to arise in more acute form in the second spell of inflation in 1955-56. But even in 1951, the central bank was compelled for some months to support the bond market against heavy selling pressure, to the extent of some £30-40 million, before « the inevitability of the change was accepted and yields were permitted to rise to about 4½% by mid-1952 » (26).

The Governor of the Commonwealth Bank, Dr. Coombs, has mentioned two other lessons from the experience of this period. « Firstly, the effectiveness of any central bank-

(25) Cf. Hirst, *op. cit.*; Coombs, *op. cit.*; also D. Rowan, *The Monetary Problems of a Dependent Economy: The Australian Experience 1948-1952*, « Quarterly Review », Banca Nazionale del Lavoro, December, 1954.

(26) Coombs, *op. cit.*, p. 11.

ing power, however apparently great, depends upon the response which banks, members of the system, make to the exercise of the power. In some countries, the nature and extent of this response is predictable because of established conventions of appropriate relationships between liquid assets and total deposits which are accepted and used as a basis of policy by the member banks themselves. Such conventions have not existed in the past in Australia and, consequently, the central bank cannot anticipate, even within wide limits, how trading banks will respond to its actions ».

« Secondly, the period shows a difficulty, from the central bank's point of view, in the banks' control over their lending operations. The banks' direct control over movements in their advances is reduced to the extent that drawings may be made by customers against limits approved in an earlier period. A tightening of a bank's lending policy will, therefore, not be immediately effective. Even the rate of creation of new advance limits cannot always be changed immediately. This makes it difficult for the banks to adjust their advances promptly to the general needs of the economy, and in a period of rising activity can cause bank lending to add to any inflationary tendencies » (27).

These conclusions are interesting not only as a commentary on the difficulties of the years 1947-51, but also for the light they throw on the central bank's efforts in the following years to remedy these deficiencies by adaptation of its special account policy.

4. Recession, 1951-52.

The year 1951-52 brought a dramatic reversal of economic conditions and in the tasks confronting the central bank. The wool boom came to a sudden end, the value of wool exports falling from £ 633 million in 1950-51 to £ 324 million in 1951-52. At the same time, the value of imports rose by over 40%, the delayed result of boom orders and easing overseas supply conditions. The result was a balance of payments deficit on current account of over £ 500 million. The drain in overseas reserves necessitated the imposition of drastic import restrictions, but not before it had not only eliminated domestic excess demand, but produced a severe liquidity crisis and the threat of a serious recession. The fall in external assets of £ 460 million exerted an equivalent contractionary effect on trading bank cash, while demand for advances increased, particularly from importers unable to sell excess stocks without disastrous losses.

As Professor Rowan has pointed out, « the central bank was required to act as a lender of last resport on an enormous scale if a banking crisis was to be avoided. Moreover, the task facing the central bank was complicated by the *speed* with which the crisis developed, for the year 1950-1951 had ended with the central bank actively attempting to restrain inflation by use of its qualitative and quantitative controls and the crisis itself began with inflationary pressure still the main problem. A disinflationary budget had also been introduced while capital issues control had been reimposed in February 1951. The difficulties occasioned by the lagged response of imports were thus, to some extent, intensified by the lagged response of fiscal policy and government administrative action » (28).

The Commonwealth Bank met this situation by prompt and vigorous measures to maintain the liquidity of the trading banks. Between March 1951 and January 1952, the trading banks were able to sell, no doubt largely to the central bank, £ 35 million worth of government securities and to borrow a further £ 28 million from the central bank. But main support to the trading banks came through releases from special accounts. After the usual seasonal releases in June-August 1951, releases continued month by month until November 1952, as much as £ 183 million being released in just two months, May and June 1952. From their peak of £ 578 million

(27) *Ibid.*, p. 24.

(28) Rowan, *op. cit.*, pp. 208f.

in May 1951, the special account balances of the major trading banks fell back to £157 million in November 1952. It was this which enabled the trading banks to expand advances by £175 million, despite a fall of over £100 million in their deposits, thus permitting importers to meet their obligations and hold their excess stocks. There can be no doubt that the central bank's skilful handling of the situation averted a serious banking crisis and helped the economy to weather the inventory recession with little disturbance to fixed capital investment and only a modicum of unemployment.

The experience demonstrated that, « whatever doubts may have existed about the effectiveness of Special Account policy in the restraint of inflation, it proved an invaluable support and stimulus to the banking system and the economy generally when faced with the need to counter serious deflationary influences originating in the balance of payments » (29). It is one of the merits of the special account procedure that, once the trading banks' balances have risen to a sufficient level in the boom, it provides the central bank with the most simple and flexible instrument for monetary expansion that could well be imagined.

But too much should not be made of this. The Commonwealth Bank, even before 1939, had not lacked the technical means for monetary expansion. As Giblin pointed out, speaking of the thirties, « there was never any doubt about its power to expand. Governments could be counted on to increase expenditure if finance was easily and cheaply provided. There was no limit to open market operations on the buying side, by which trading bank liquidity could be increased to any extent. Even if the response was slow, the Bank could force the pace by expanding its own advances and the investments of the Savings Bank » (30).

It is true that all the methods mentioned by Giblin served to increase the money supply in the hands of the public rather than to expand trading bank liquidity directly. In circumstances, of which the 1952 episode may well have been an instance, when the central bank wants to concentrate expansion on trading bank credit (e.g. to finance importers), the Special Account procedure is technically superior. But with this minor qualification, the efficacy of central bank action in the 1951-52 recession, as contrasted with the depression of the early thirties must be ascribed, not primarly to its possesion of a new instrument, but to its determination, backed by government and public opinion, to prevent any serious deflation, to the continuing buoyancy of private long-term expectations, and to the fact that readiness to use import restrictions eliminated the balance of payments as an obstacle to monetary expansion.

5. New Special Account Policy and Legislation, 1952-53.

Even cursory examination of the banking statistics for 1952 makes it apparent that the releases from special accounts which were granted by the central bank in that year went far beyond the extent required to support the liquidity of the banking system. Well after the distress borrowing of the first half of the year had reached its peak in July and was beginning to be repaid from the proceeds of the liquidation of excess stocks of imports, and while bank deposits were rapidly recovering, releases from special accounts continued, until the trading banks reached a degree of liquidity probably unprecedented in the twentieth century. By November 1952, the ratio of the banks' liquid assets (cash and treasury bills) plus government securities to their deposits reached 30% and special accounts were down to 15%, as contrasted with corresponding ratios of 12% and 43% a year earlier. The explanation for this extraordinary change is the adoption by the central bank of an entirely new special account policy during 1952-53.

(29) Coombs, *op. cit.*, p. 16.
(30) Giblin, *op. cit.*, p. 218.

The new policy was briefly hinted at in the Commonwealth Bank's Annual Report for 1953 and set out more fully in its Annual Report for 1954. The latter exposition is sufficiently important to warrant quotation in full.

« In its Annual Report last year the Bank stated that Special Accounts were now being administered to regulate the impact on the system of fundamental changes in banking liquidity such as those arising from the balance of payments and from changes in the pattern of government finance. This leaves to the individual bank the responsibility for maintaining, apart from Special Account, a structure of assets sufficiently liquid for all normal requirements, including seasonal and other short-term demands on its cash. If the banks are to bear this responsibility and Special Accounts are to be available to meet major losses of deposits and cash of the kind experienced in 1951-52, it is essential that their policies should be directed to maintaining an adequately liquid structure of assets. The most suitable distribution between the various kinds of liquid assets will vary to some extent from bank and from one time of the year to another, but it is the view of the central bank that a ratio of liquid assets (comprising cash, deposits with the central bank and Treasury bills) and Government securities to total deposits of about one quarter, allowing for seasonal and other short-term variations, would generally be appropriate. If banks adjusted their lending policies from time to time so as to work towards this general objective it would be easier for the central bank to ensure that the banking system had sufficient, but not more than sufficient, funds to meet the needs of a steadily expanding economy » (31).

The new policy meant a radical departure from the special account policies pursued since 1945. Until 1951, the central bank had treated the special account procedure, in effect, as a direct quantitative control of bank credit. Its special account policy had aimed at limiting trading bank liquidity to the minimum they would require to meet the « needs of trade » from month to month. The central bank had assumed complete responsibility for judging the appropriate volume of credit, and for adjusting special accounts correspondingly to seasonal as well as all other changes in the liquidity of the various banks, by implication leaving the trading banks free to do what they liked with the funds left at their disposal.

The new policy was to use the special account procedure, not as an instrument of control of trading bank liquidity, but rather as a signal to the trading banks indicating the credit policy which the central bank wished them to pursue. Its basis was to be co-operation, not coercion. The trading banks were asked to agree to conduct their advance policies so as to maintain an average LGS ratio (Liquid assets plus Government Securities to deposits) over the year of 25%. The central bank would use special accounts so as to reduce the trading banks' LGS ratio somewhat below 25% if it wished them to restrict advances, or raise the LGS ratio somewhat above 25% if it wished them to expand advances. The trading banks were to look after seasonal and other short-term variations in their liquidity; the central bank would aim at offsetting major cyclical changes originating in the balance of payments or government finance.

The new policy was introduced in the first half of 1953 after consultation with the trading banks and presumably, at least in the understanding of the central bank, after the trading banks had accepted the gentlemen's agreement which it implied. The large-scale releases from special accounts in the second half of 1952 paved the way by raising the liquidity of the trading banks, initially even beyond the new target level of 25%, thus enabling the banks to repay central bank loans and increase their holdings of cash as well as of treasury bills and government securities.

What were the reasons for this change in special account policy? Published statements by the Bank and by its Governor, together

(31) Commonwealth Bank, *Annual Report, 1954*, p. 24; cf. also Coombs, *op. cit.*, pp. 17f.

with circumstantial evidence, suggest that it was motivated by three main considerations.

The first was « the experience of past administration of Special Account policy ». This experience seems to have suggested to the Bank that the special account procedure could not be made an effective instrument of restraint without the willing co-operation of the trading banks. As Dr. Coombs put it, « since the effectiveness of any Special Account policy depended upon the response of the trading banks it was important to increase their responsibility and their understanding of the purpose the central bank was seeking to achieve ». More particularly, « the effectiveness of Special Account policy, particularly in the restraint of inflationary tendencies, was greatly weakened by the absence of conventional standards in the attitude of Australian banks towards their asset structure »; and while « the Special Account was a useful instrument in offsetting the effects on the banking structure of major factors affecting the volume of deposits and the cash assets of banks, i.e. major changes in the balance of payments and in the sources of governmental finance... it was less useful in dealing with the more irregular and unevenly distributed factors affecting bank liquidity » (32).

These conclusions were reinforced by a distinct change in the trading banks' attitude to their special account balances which occurred as a by-product of the releases from special accounts in 1951-52. Since withdrawals from special accounts were legally subject to the discretionary consent of the central bank, the trading banks strictly had to regard their special account balances as a frozen, completely illiquid asset. Even before 1951-52, this conception was weakened in its foundations by a basic fact of life of modern banking. No Government nowadays can afford to allow the banking system to collapse; in a system like the Australian which consists of a few large banks, it is doubtful whether a Government can afford to allow even one bank to suspend payment. Trading banks will not, in reliance on this fact, expose themselves to unnecessary risk of illiquidity. But it must in some measure weaken their determination to maintain a reserve of liquidity against major cyclical or other losses of deposits. In Australia, the events of 1951-52 brought this fact of life into the open. If the central bank could be relied upon to release special account balances whenever trading bank liquidity was impaired by external deflationary influences, the trading banks could afford to treat them, to that extent, as a liquid reserve and correspondingly to reduce the volume of other liquid assets they might otherwise have thought it necessary to hold for this purpose. The new special account policy was partly designed to meet a situation in which « some trading banks were unwilling to base their lending policies on their asset structure *excluding Special Account* and consequently found their other liquid assets steadily depleted » (33).

The third major consideration was the passage by Parliament in 1953 of amending legislation which significantly curtailed the legal special account powers of the central bank (34). The private trading banks, as we saw before, had accepted the continuation into peace-time of the war-time system of banking controls by the 1945 legislation only under the most vigorous protest. The Chifley Labour Government's attempt at bank nationalisation united them in a fierce campaign against this greater threat and, for the time being, made it seem politic to them to seft-pedal their objections to the existing system of controls (35). But in the following years, and

(32) Coombs, *op. cit.*, pp. 16f.

(33) *Ibid.*, p. 16 (italics supplied).

(34) Commonwealth of Australia, *Banking Act*, No. 13 of 1953.

(35) Cf., *e.g.*, National Bank, *Annual Report, 1949*, pp. 13f: « I state clearly this Bank's attitude towards the Banking Act of 1945. 1. At no time has this Bank directly or indirectly attempted to attack the 1945 Act ... This Bank wholeheartedly accepts the principle of a Government Central Bank. 4. This Bank agrees it is a duty of the Central Bank to give leadership to the financial system and that it is its own duty to accept such leadership and abide by it ».

particularly after the accession to office in 1949 of a sympathetic conservative Federal Government, the banks themselves and the financial press on their behalf, with increasing frequency and energy, expressed their « grave concern at the perpetuation... of this particularly rigid statutory control system designed for use in time of war » and strongly urged « on the appropriate authorities the need for its early revision » (36).

The trading banks' objections to the « unrealistic and vindictive provisions of the 1945 banking legislation » (37) were manifold. The special account system lacked flexibility, caused uncertainty, limited the earning capacity of the banks and had been used unduly restrictively. « Experience has proved that undue freezing in Special Accounts by the Central Bank of Trading Bank funds, deprives the banking system of that flexibility essential to meet the ever-changing demands encountered in Australia » (38). « Trading bank advances have played very little part in contributing to the inflationary situation... Drastic restriction of bank credit is likely to add little to an attempt to check or reverse inflation; there is a limit to which credit can be restricted and yet still keep the wheels of commerce and industry turning at a satisfactory rate » (39). « This special account system as a permanent feature of the banking structure is an unwarranted drag on the banks in the expanding economic horizon of the nation » (40). It was a « legislative strait-jacket » (41) which gave « the central bank power to control the banks rather than to regulate the volume of credit » (42) and failed to give the trading banks responsibility commensurate with their « tradition and accumulated experience. The banks are in close touch with the business community and understand its legitimate needes » (43).

Besides these general demands for curtailment of the central bank's special account powers, the trading banks had two particular grievances. One was the very large « uncalled liability », amounting to about £ 550 million at the end of 1952, that had accumulated since 1945 through the failure of the central bank to call to special accounts the maximum amount it was legally entitled to call. The trading banks saw, or professed to see, in this « liability » a threat to their existence. As one commentator has put it: « if it had been clearly recognised by all concerned that Special Accounts were to be used only to prevent inflation and not to cause deflation and if no party politics had entered the situation, there would have been no cause for alarm... However, the abortive attempt in 1947 to nationalise banking business in Australia... made supporters of private enterprise very anxious about the future of banking. The existence of the large uncalled liability on Special Accounts at the end of 1952 seemed a real danger; a Labour Government in the future, even without an Act to nationalise the banks, could have gradually squeezed the private banks out of business. By using the Special Account powers of the Commonwealth Bank, under the Banking Act of 1945, a government could have forced the private banks first to sell their government securities and then recall their advances. To prevent a depression the Commonwealth Bank would have increased its advances and taken over the private banks' customers » (44).

The private banks' other grievance was the Commonwealth Bank's trading banking activities. Since 1945 the Commonwealth Bank had resumed active competition for ordinary

(36) National Bank, *Annual Report, 1951*, p. 6.

(37) Bank of New South Wales, *Annual Report, 1953*, p. 18.

(38) Commercial Bank of Australia, *Annual Report, 1953* (Chairman's Address).

(39) Bank of New South Wales, *Annual Report, 1950*, p. 20.

(40) Bank of New South Wales, *Annual Report, 1953*, p. 18.

(41) National Bank, *Annual Report, 1952*, p. 6.

(42) Bank of New South Wales, *Annual Report, 1952*, p. 19.

(43) Bank of New South Wales, *Annual Report, 1951*, p. 11.

(44) Gifford, Wood & Reitsma, *Australian Banking*, 2nd edition, Brisbane, 1955, p. 132.

banking business. The private trading banks bitterly resented this competition which they claimed to be unfair on the grounds that the Commonwealth Bank, in its trading bank capacity, enjoyed the advantage of the knowledge it obtained as a central bank and that it was formally exempt from legal central bank controls, including the special account power. They demanded separation of the central and trading bank functions of the Commonwealth Bank and the subjection of the Commonwealth trading bank to the same controls as applied to themselves.

The Menzies-Fadden Government went some way towards granting all these demands in amending legislation to the 1945 Banking Acts which became law at the end of April 1953. A separate Commonwealth Trading Bank was formed, though it remained under the control of the Governor and Board of the Commonwealth Bank; the Commonwealth Trading Bank was made subject to all central bank controls of the trading banks, including special accounts; the accumulated uncalled liability of the trading banks was wiped out, and a new procedure was laid down designed to limit the amount callable to special accounts at any time and prevent the renewed growth of uncalled liabilities from year to year.

Henceforth, special accounts were to vary with trading bank deposits, instead of with assets as hitherto. The maximum callable was to be the initial amount on special account (totalling £171 million) on October 10, 1952, plus 75% (in place of the former 100%) of any increase in each trading bank's deposits (or minus 75% of any decrease), with the proviso that any uncalled liability of a trading bank at the end of September of each year was to be cancelled which exceeded 10% of its deposits in the preceding August (45). The Act also eliminated the former statutory limit of 17/6d. per cent. to interest payable on special accounts and required the central bank to inform the trading banks during each financial year, in confidence, of its estimates of movements during that financial year in the total deposits and liquid assets of all banks, and of likely changes in the aggregate Special Accounts of all banks during each half-year (46).

Most of these changes in the special account procedure mattered little . The cancellation of the accumulated uncalled liability was reasonable, but of political rather than central banking significance. The same applied to the extension of the special account power to the Commonwealth Trading Bank which the latter had anticipated since July 1952 by voluntary deposits of the appropriate amount. The change-over from asset to deposit increases as the base for calculating the maximum callable meant that new capital issues by the trading banks, of which virtually none had been made in the post-war years but on which all of them embarked on a large scale from July 1953 onwards, would no longer increase their special account liability; although circumstances were conceivable in which a trading bank could use the proceeds of a capital issue temporarily to escape central bank restraint in its liquidity, this also was unlikely to weaken central bank control significantly.

The one important change was the limitation imposed upon the proportion of any increase in trading bank funds which the central bank could immobilise in special accounts. Before 1953, it had had the power to freeze 100% of any such increase, and once a substantial uncalled liability had accumulated, actually to reduce trading bank liquidity from any given level. The new formula did not restrict the central bank's power to call as much as might appear at first sight. Calls of 100% or more of increases in trading bank deposits would still be possible whenever a significant portion of the amount callable had not been called in the year prior to the preceding September 30 (up to 10% of the trading bank's August deposits) or since the preceding October 1. But if no such uncalled liability

(45) This is merely the gist of the complicated new formula; for further details see *Banking Act*, 1953, and Gifford, Wood & Reitsma, *op. cit.*, pp. 133ff.

(46) Commonwealth Bank, *Annual Report*, *1953*, pp. 22f.

had developed, the 75% limit became effective and could become a significant constraint upon central bank control of trading bank liquidity; particularly in the first year, 1953, when, in the nature of the formula, no reserve uncalled liability was available.

It was this feature of the 1953 legislation which probably operated as one contributory motive for the adoption of the new special account policy in 1952-53. Although the new legislation did not become operative until April 29, 1953, its main features were announced by the Prime Minister in November 1952 and must have been known to the Bank even earlier.

Before proceeding to examine how it worked out it practice, one other aspect of the Commonwealth Bank's new special account policy needs to be mentioned. This was the change in the principle of distribution of special accounts between the individual trading banks which was made at that time. It will be recalled that about 1948, the central bank had evolved the SACT ratio as the criterion for allocating calls to special accounts among the trading banks. This ratio still provided the basis for distribution of the releases from special accounts in the first months of 1952. But in the latter half of 1952, the central bank moved towards a new criterion which became established in 1953 and has been used ever since: an equal ratio of special accounts to deposits for each trading bank.

The SACT ratio which, formally at least, discriminated in the severity of special account pressure in favour of banks with holdings of treasury bills clearly lost its point under the new regime, under which all trading banks were committed to a 25% LGS ratio but free to distribute this 25% between cash, treasury bills and government securities as they pleased. The new principle, of an equal ratio of special accounts to deposits, was as liable as the SACT ratio to yield very different « severity ratios » for different banks, and could be regarded as « unfair » if the severity ratio was adopted as the criterion of fairness. For with an equal special account-deposits ratio, a bank which was gaining deposits at the expense of other banks would experience a fall in its severity ratio, relative to those of the other banks. But there was no a priori reason for regarding the severity ratio as the more appropriate criterion of equity than the special account ratio, and the latter had the decided merit that it was much more likely to do rough justice in the longer run. The adoption of an equal severity ratio as the guiding principle would have been unfair to banks which happened to gain business in periods of generally high ratios (strong central bank pressure) as compared with those banks which happened to gain in periods of generally low ratios. It could also be justified on the ground that it was identical with the principle of distribution implicit in the conventional system of minimum reserve ratios for which some of the private trading banks themselves had recently expressed a preference over the special account procedure (47). The point would not be worth discussing at this length had it not become a matter of political controversy in the next two years because of the unfortunate coincidence that it was the Commonwealth Trading Bank which derived the chief benefit from the principle that had been adopted.

6. Renewed Inflation, 1953-55.

The financial year 1952-53 saw a very satisfactory recovery of the Australian economy from the recession, helped by an unexpected surplus of nearly £ 200 million in the balance of payments and by an expansionary budget policy, as well as by the central bank's vigorous injection of money into the system. The inflation had been halted, and during the first half of 1953, something like internal balance was achieved for the first time for very many years. With the elimination of excess demand, the wage-price spiral soon petered out of its own accord, so that wage and

(47) Bank of New South Wales, *Annual Report, 1953*, p. 18; Commercial Banking Company of Sydney, *Annual Report, 1953*.

price stability had been virtually attained by the time the Arbitration Court suspended automatic cost-of-living adjustments of the basic wage.

The central bank resumed calls to special accounts in January 1953. In the face of a rapid increase in the trading banks' liquid assets and deposits, which resulted from unexpectedly high export earnings, the substantial calls between January and April, totalling £145 million, were no more than sufficient to reduce the banks' LGS ratios from 30% to the new target level of one-quarter. They left the banks with ample funds to meet all current demand for eligible advances. But it is of interest to note that, during these months, the central bank could not have called more even if it had wished. The restrictive effect of the 1953 legislation had made itself felt. « By the end of the financial year the Commonwealth Bank's then existing powers to call to the bank's Special Accounts had been exercised virtually to the full extent. Consequently, practically the whole of the banks' holdings of liquid assets and government securities, representing 24 per cent. of deposits, were not subject to control by Special Account » (48). The experience seemed to justify the decision to rely on voluntary adherence by the trading banks to a 25% liquid asset ratio.

The year 1953-54, taken as a whole, represents an almost ideal picture of rapid economic growth under conditions of internal and external balance. Thanks to a substantial increase in rural as well as industrial productivity, national income rose by 5% with almost stable prices. There was full employment without inflation and external balance with gradual relaxation of import restrictions.

This overall picture, however, conceals the fact that the last months of the year saw the beginnings of a domestic investment boom which, in the following year, assumed the most serious proportions, causing a severe balance of payments crisis and renewal of the post-war inflation. From 1953-54 to 1954-55, gross private investment in fixed capital rose by £110 million or 15% and in stocks by £85 million, consumption by £268 million (9%), company profits by 12% and incomes of unincorporated businesses (other than farmers) by 8½%. There was increasing pressure of demand for labour, reflected in a rise of unfilled vacancies from 23,000 in June 1953 to nearly 60,000 in June 1955. Domestic excess demand spilled over into imports which rose from a monthly average of £40 million in 1952-53 to one of £75 million in the first half of 1955. The rise in imports, accompanied by sagging export prices, produced a drain on external reserves of £142 million, despite unusually high capital inflow of £114 million, and necessitated the reimpositions of increasingly severe import restrictions from October 1954 onwards. From the beginning of 1955, wages resumed their upward movement, chiefly through rising above award payments, followed by corresponding increases in retail prices (49).

The task of keeping this boom under control put the new special account policy to a severe test. It failed completely. During the first quarter of 1953-54, the usual seasonal decline in bank deposits reduced the maximum amounts which the central bank could, under the 1953 legislation, hold in special accounts and compelled it to make statutory releases totalling £50 million. With the seasonal rise in deposits, the central bank was able to call £90 million between January and March 1954. (Contrary to the intentions of the new special account policy, the exigencies of the 1953 legislation, therefore, again led to seasonal variations in the level of special accounts).

Throughout the year, bank advances, which had fallen slightly in the six months to June 1953, rose extremely rapidly, by £123 million in all. The calls to special accounts during the last months of the year were, in conformity

(48) Commonwealth Bank, *Annual Report, 1953*, p. 26.

(49) For a general analysis of the 1954-56 boom, see R. I. Downing, *The Australian Economy, March 1956*, « Economic Record », May 1956; also *Australia, 1956: An Economic Survey*, Government Printer, Canberra, 1956.

with the new policy, aimed at reducing the trading banks' LGS ratios below the target ratio of 25% — they were down to 21% at the end of June — and thus compel them, if they were to adhere to the new convention, to restrain the increase in advances. The same policy was continued during the first half of 1954-55. As the balance of payments deficit and consequent decline in international reserves reduced the liquid assets of the trading banks from May 1954 onwards, the central bank, under the old special account policy, would have allowed the banks to feel all or most of this pressure on their liquidity in order to limit the funds available to them for expansion of advances; special accounts would have been held constant or even increased. Under the new policy, the central bank's task was merely to maintain sufficient special account pressure to keep the signal for a restrictive advance policy hoisted by holding the trading banks' LGS ratio below 25%. Accordingly, from May 1954 on, the central bank released funds from special accounts at a rate which kept the special account ratio approximately constant, first at 24% and after November 1954 at about 20%.

The only effect was that bank advances increased by a further £ 100 million between April and December 1954. Under boom pressure of demand for advances, most of the trading banks simply abandoned the new convention and allowed their LGS ratios to fall. Over the year 1954-55 the private trading banks' LGS ratio averaged only 18%, with a seasonal high of 21.5% and a seasonal low of 16%. The only banks which kept their LGS ratios at or above the agreed level were the Commonwealth Trading Bank and the Commercial Banking Company of Sydney, though there were wide variations even among the other banks' figures. As in the first post-war inflation, the Melbourne banks, and particularly the two London head office banks, went furthest in allowing their advances to rise at the expense of their liquidity, the E.S. & A. Bank finding itself in June 1955 with a ratio of liquid assets and government securities to deposits of only 6.4%.

The Commonwealth Bank's attempt to reconstitute central banking in Australia on the basis of voluntary co-operation by the trading banks through adherence to a conventional liquid asset ratio had signally failed.

The immediate reason for the failure was, of course, the refusal of the majority of the private trading banks to follow the central bank's policy. Even if, as some of them have claimed since, they did not regard themselves as having entered into a binding agreement to observe the 25% LGS rule in their earlier discussions with the central bank, they cannot have been in any doubt as to the policy which the central bank wished them to follow. Nor is there much substance in the argument that the central bank could not expect the trading banks to work to a uniform liquid asset ratio as high as 25%. While it is true that this ratio was higher than some of the banks had customarily maintained, and that there had always been a wide divergence of ratios among the banks, there is also some reason to believe that the trading banks could not agree among themselves on, and were not prepared to accept, a procedure by which each bank would have nominated the LGS ratio to which it would work. The brute fact is that most of the trading banks still, at heart, felt about central banking much as, according to Giblin, they had done in the 'thirties: « While consideration for profits and prestige was in part responsible for this resolve [to fight effective control of their credit policy by the central bank], with some banks at least it was almost sanctified by the conviction that their judgments on the appropriate monetary policy in any given circumstances were better than that of the Commonwealth Bank » (50).

(50) GIBLIN, *op. cit.*, p. 228; cf. also the Bank of New South Wales' criticism of the central bank's 25% LGS ratio policy (*Annual Report, 1954*, pp. 18f.): « With the special accounts in September equivalent to about 23% of deposits, the maintenance in addition of such a high ratio of free liquid assets ignores the realities of seasonal movements » — the Bank of N.S.W. seems momentarily to have forgotten that the central bank's request for an average 25% ratio over the year explicitly

A number of factors aggravated the problem in 1954-55. One was again the inadequacy of the trading banks' own control over their advances under the overdraft system which Dr. Coombs had mentioned as one of the lessons of the years 1948-51 (51). It is said that one of the private trading banks found its advances rising by a further 7% for this reason after its head office had, towards the end of 1954, adopted a strict policy of holding advances at their current level.

Another was the fact that, during this period, the Commonwealth Trading Bank was steadily gaining deposits relatively to the private banks and was therefore able to expand advances more rapidly than some of the latter while being subjected to the same special account policy and yet adhering strictly to the agreed LGS ratio — indeed throughout the period it maintained a substantially higher degree of liquidity than the private trading banks (52). Whatever the reasons for its gains of business — the greater freedom of action which the recent separation from the central bank had given it and its association with the Commonwealth Savings Bank in banches all over the country were probably the most important — its successful competition inevitably made the private banks more reluctant than ever to restrain their own competition for advances. Perhaps it would have been wise in the circumstances for the central bank to discriminate against the Commonwealth Trading Bank, even though such discrimination would have been strongly and rightly attacked had it been directed against a private trading bank in the same conditions; indeed such discrimination was applied in January 1955 when the Board ordered the Commonwealth Trading Bank not to increase its share of total advances further, however much its share of deposits increased. But while such action would have deprived the private trading banks of a debating point, it is doubtful whether it would have made much difference to their policies.

The basic difficulty, which provided a legitimate partial defence for the trading banks (as well as the central Bank), was the enormous pressure of demand for bank credit in an otherwise uncontrolled development and investment boom. A boom stimulated by a large migration intake, tax reduction and every official encouragement to private investment, in the face of falling farm incomes and savings, could not be held back by controls of bank credit alone, certainly not without causing serious distortions in the economy and injustice to forms of business dependent on bank credit. The trading banks not unreasonably camplained that, while they were being asked to restrain advances, hire-purchase finance companies were bidding away funds from the banks' deposits at uncontrolled interest rates and using them to expand credit at the rate of £60 million in one year (1954-1955), and that other businesses, unable to obtain bank credit, turned to large scale issues of debentures.

The rise in interest rates in the uncontrolled sectors of the capital market also increased the difficulties arising from another aspect of government policy, insistence on the maintenance of the current level of government bond yield and bank interest rates. During 1954-55, the central bank had been able to

allowed for seasonal variations around this average — « and the positive part the banks must play in development of the Australian economy through the time-honoured system of flexible advances. It appears only too evident that the central bank bases its theories on an experience which may not be entirely appropriate to dynamic expansion ».

(51) See above, p. 245-46.

(52) The Commonwealth Trading Bank's LGS ratio compared as follows with the average ratio of the private trading banks:

	C. T. B.	Private
January 1954	42.0	26.2
June 1954	37.2	19.6
January 1955	34.4	20.5
June 1955	33.2	16.6
January 1956	29.7	21.1
June 1956	29.8	17.0

The Commonwealth Trading Bank's share in the total deposits of the eight major trading banks rose by 17% from 10.63% in January 1954 to 12.44% in June 1956; its share in total advances rose by only 5.5% from 8.67% in June 1954 to 9.15% in June 1956. (Its share in total advances between January 1954 and June 1956 actually fell, but its share has generally been lower in June than in January, presumably because of its relatively smaller export business).

offset the effects of rising bank advances on the liquidity of the public to some extent by sales of securities in the open market. But in the latter half of 1955, as bank credit became tighter, it was driven into the same dilemma as in 1951: in order to support the bond market, it had to buy an increasing volume of bonds, thus undermining its own policy of credit restraint. It was not until March 1956 that the Government, which earlier had confined itself to a policy of exhortation, was persuaded to permit interest rates to rise and to resort to disinflationary taxation in a supplementary budget (53).

It is fair to say that the ultimate responsibility for the renewal of inflation in 1954-1955 lies neither with the central bank nor with the trading banks, but with the Government's failure to take any disinflationary action in its own sphere, whether through budget policy, direct controls, or an adjustment in the rate of immigration and development, thus throwing an impossible burden on monetary policy.

Despite its evident failure, the central bank — with a patience which was perhaps misplaced in the circumstances — persevered with the 25% LGS ratio policy into the new financial year, making further seasonal releases from special accounts during June-August 1955. In the second half of 1955, it admitted defeat. Those trading banks which had not adhered to the 25% LGS ratio had, by the middle of 1955, reached the limit to which they could allow their liquidity to fall for their own safety, and the rise in advances ceased. The central bank now reverted to the earlier policy of using the special account procedure for direct quantitative control of trading bank liquidity — for the remainder of 1955-56 it aimed at keeping the trading banks' special account ratio at 18% — but with two important differences.

In the first place, it retained equal special account ratios as the principle of distribution of special account calls between the various trading banks. In the second place, it decided to relieve the rigidity of an equal special account ratio for all trading banks by standing ready, as in 1948-51, to make loans to trading banks, but now at a rate of interest, somewhat above bank advance rate, which would have a deterrent effect. The new policy appears to have had the desired effect (54). It has given relief to banks in severe liquidity trouble, but has kept down resort to central bank credit to the minimum and for short periods only (55).

With the latest revision of special account policy, the wheel has come full circle. For all practical purposes, the special account procedure has been adapted to operate, for the time being, exactly like variable minimum reserve ratios coupled with central bank loans at penal rates. The Commonwealth Bank has, in fact, adopted the central banking technique in use in New Zealand.

7. Conclusions.

We have now examined the operation of the special account procedure over a period of fifteen years. What conclusions can we draw about its merits as a central banking instrument?

The first point to emphasise again is that the difficulties and partial failures of Australian central banking in the post-war years were largely beyond the control of the central bank and could not have been avoided by the most perfect central banking technique. Both in 1948-51 and in 1954-56, too much was demanded of monetary policy. Even within the field of monetary policy, the central bank's task would have been easier had its powers

(53) Cf. on the economic policy background, Downing, *op. cit.*

(54) In September 1955, quantitative control was reinforced by the re-imposition of qualitative control of advances which had been abandoned in 1952 (though in the form of « requests » in place of the former « directives » to trading banks).

(55) In 1955, only the E.S. & A. and A.N.Z. Banks borrowed small amounts (approx. £1 million) for short periods; from April 1956 for some months, rather larger amounts were borrowed by these two banks, as well as the National Bank, with a peak of about £18.5 million in June.

extended beyond the trading banks to other rapidly growing sectors of the capital market and had it not been hampered in its policy of monetary restraint at two crucial periods by the obligation to support the existing level of bond prices.

Turning now more specifically to the special account procedure, the most striking impression is the variety of different special account policies with which the central bank experimented over the post-war years. In one sense, the fact that the device could so easily be used in so many different ways is a tribute to its flexibility (56). But this is perhaps taking too complacent a view. The fact is that none of the various uses of special accounts between 1945 and 1955 proved effective in controlling bank credit expansion. During the first post-war inflation, when it was used as a direct control of trading bank liquidity, its efficacy was reduced by reluctance to apply it too drastically and by unrestrained resort by trading banks to central bank credit. During the second post-war inflation, when it was used as a signal to the trading banks, in reliance on their voluntary co-operation, it failed because this co-operation was not forthcoming. It is arguable that the central bank has only now worked its way to what may be the only practicable special account policy for restraint, a policy of uniform strong special account pressure on trading bank liquidity coupled with readiness to lend at penal rates, in other words, the policy which assimilates special accounts to minimum reserve ratios (57).

In another sense, too, the flexibility of the special account procedure has proved to be somewhat illusory. It will be recalled that, in the pre-war discussions, one of the objections to the use of minimum reserve ratios in Australia had been that uniform ratios for all trading banks were inappropriate in view of the widely divergent liquidity policies of the different banks. A minimum ratio which would impose severe pressure on one bank would leave another free, by its own liquidity standards, to expand advances substantially. The special account procedure, it was hoped, would overcome this difficulty by permitting the central bank to discriminate freely between different trading banks. This hope has not been fulfilled. Quite soon after the war, the central bank found the adoption of some principle of « uniform » distribution of special account calls a political necessity. The principle, moreover, to which it has come round, for the present at any rate, is the very principle of minimum reserve ratios — equal ratios of special accounts to deposits. The answer to the original objection has been found to be, neither discriminatory pressure on different banks nor voluntary acceptance by the banks of uniform liquidity ratios, but uniform reserve ratios combined with central bank willingness to act as lender of last resort at penal rates.

Our conclusions, then, are remarkably similar to those reached by the recent New Zealand Royal Commission. « It was unwise to rely on this form of restraint (voluntary co-operation from competitive trading banks) in a situation where competitive trading banks, holding substantial excess cash reserves, were confronted with a very strong demand for advances from credit-worthy borrowers » (58). The appropriate policy for the central bank in such circumstances is a firm policy of « re-

(56) This is E. F. Herbert's view, *op. cit.*, p. 91.

(57) It is interesting to note that, according to Giblin, the Royal Commission of 1936 had already canvassed this method of overcoming the objection to minimum reserve ratios, though without very clear appreciation either of the inescapable obligation of the central bank to act as lender of last resort or of the need for really deterrent rates of interest: « Under pressure it was admitted (by the Commonwealth Bank) that a uniform variable percentage could be made to work, if the Commonwealth Bank advanced on nominal rates to all the trading banks which were conforming in policy and let the weight of the minimum deposits obligation fall only on the recalcitrants. In the same way, even fixed minimum reserves could be made effective, if the minimum percentage was fixed at a very high figure but normally the trading banks were provided with funds at nominal rates. The rate could be stiffened or the funds withdrawn if any bank offended against central bank policy » (*op. cit.*, pp. 221f.). At the time, however, the trading banks' stand against borrowing from the central bank was regarded as an immovable obstacle.

(58) Royal Commission, *Report*, para. 386.

ducing the margin of free cash available to the banks to a very low level » (59) and, while ready to act as lender of last resort, imposing « an interest rate for trading bank borrowing from the (Central) Bank that (makes) it unprofitable for the banks to expand their advances unduly » (60).

If the special account procedure is to be used exactly like a system of variable minimum reserve ratios, it may be asked whether Australia might not do well to make the change in law as well as in practice. There is one minor advantage to be gained from such a change. It arises from the fact mentioned before that the trading banks and their political supporters have been able to use, as a debating point against the Commonwealth Bank, the argument that the Commonwealth Bank « borrows » from the banks (on special accounts) at ½% and lends « their money back to them » at 3½% (61). Open use of penal rates on central bank loans — it should perhaps be mentioned here that the Commonwealth Bank has so far refrained from the New Zealand Reserve Bank's practice of publishing changes in its « discount rate » for their psychological effect — would reinforce this silly but politically effective argument which might be less plausible, even to the most gullible, if frozen balances were called « trading bank minimum reserves » rather than « special deposits with the Commonwealth Bank ».

But the balance of advantage seems to be overwhelmingly against a legislative change. In the political climate surrounding banking in Australia, the less legislation about banking the better; the risk of changes which would still further hamper the central bank far outweighs the advantages that might be gained. Moreover, our conclusion in favour of the present special account policy is necessarily a tentative one. It is possible that changing circumstances may make further modification of special account policy desirable. The central bank's legal powers under the special account procedure, though somewhat restricted since 1953, still give more legal scope for adaptations of policy, including when necessary and expedient occasional discrimination between different trading banks, than any legislation providing for variable legal minimum reserve ratios is likely to afford.

H.W. Arndt

(59) *Ibid.*, para. 389.
(60) *Ibid.*, para. 418.
(61) Cf. E.S. & A. Bank, *Annual Report, 1949*: « We continue to pay interest at 3½% per annum on the funds deposited with us, and to receive ½ per cent. per annum on the balance of our Special Account. The effect on our earnings is obvious... ».

POSTSCRIPT

Since this paper was written, the Commonwealth Bank, in its 1956 Annual Report, has announced yet another change in special account policy. « Each bank has assured the Central Bank that its policy will be directed to ensuring that its LGS ratio will not fall below an agreed uniform minimum. Such an assurance provides a firmer and more certain base for Special Account policy and, as a result, smaller changes in Special Accounts are needed than might otherwise be required... It may be necessary from time to time for some banks to borrow from the Central Bank to ensure that their LGS ratios do not fall below the minimum during the lean period of the year. Marginal loans of this kind can be justified as necessary to provide time for a change in policy to become effective. Continued dependence on Central Bank loans for significant periods calls for an adjustment of a bank's general trading policy » (62).

The announcement has been greeted as a « second try at liquidity ratios » (63). It does suggest, at first sight, that the Commonwealth Bank is making another attempt at operating special accounts on the basis of voluntary adherence by the trading banks to a conventional liquid assets ratio, and that on this occasion the trading banks have entered firmly

(62) Commonwealth Bank, *Annual Report, 1956*, pp. 17f.
(63) *Sydney Morning Herald*, September 12, 1956, p. 10.
(64) *Ibid.*

into the agreement, without reservations or misunderstandings. But the new agreement is, in fact, a mere shadow of the 25% average LGS ratio policy of 1954.

The Commonwealth Bank has not announced the new agreed LGS ratio, but it has been suggested that it is something like 14% (64). Not only is this very much lower than the 1954 ratio of 25%, lower in fact than the LGS ratios which all but two or three of the trading banks would, of their own accord, regard as safe, but it is to be treated as a *minimum*, not as in 1954 as an annual *average*. It is this fact which makes all the difference.

Strict adherence to a conventional *average* liquidity ratio compels each trading bank to adjust its advance policy to every change in special accounts which reduces its ratio below or raises it above the conventional level. An agreed *minimum* ratio leaves a trading bank quite free to heed or ignore special account changes in its advance policy unless and until its LGS ratio is at or near the agreed minimum. It is, in fact, irrelevant to banks which, for their own reasons, will not in any case allow their liquidity to fall to or below the agreed minimum.

Its sole effect is to raise to 14% the minimum LGS ratios of the three banks which in the past have at times been willing to allow their LGS ratios to fall below this level. This may help the central bank in a small way. Until now it could never be sure just what each trading bank regarded as its own safe minimum ratio; henceforth it will know that the minimum is not going to be less than 14% for any bank. The 14% minimum should also mean that there will be no need to make calls on all banks merely to impose restraint on two or three banks which, in pursuit of advance business, are allowing their liquidity to fall below 14%. To that extent, the convention somewhat alleviates the central bank's dilemma arising from the widely divergent policies of the several trading banks and its own reluctance to discriminate between them in special account calls. But that, as far as one can tell, is the only immediate advantage which the central bank can hope to gain from the agreement.

The agreement, in fact, is not a second attempt at the 1954 policy of voluntary co-operation on the English textbook model. The Commonwealth Bank's policy remains substantially that recommended in the conclusion of this paper (and by the New Zealand Royal Commission) of using special accounts as a form of direct quantitative control of trading bank liquidity and relieving the rigidity of uniform calls to special accounts by central bank loans at penal rates.

One may speculate that the central bank has this time contented itself with a very modest convention to which it could obtain the agreement of all the banks, in the hope that, once the trading banks accustom themselves to operating this convention, they may in due course be induced to accept and abide by a more substantial one. For anyone who holds the view that central banking cannot, in the long run, operate effectively without the voluntary co-operation of the trading banks, this is undoubtedly the most promising strategy. But it must be recognised that on this occasion only two or three of the trading banks have given anything away. The crucial test of a policy of voluntary co-operation is a convention under which the trading banks effectively surrender to the central bank the right to determine when and by how much aggregate bank credit is to be expanded or curtailed, and that means a convention based on average, not minimum, liquidity ratios.

H.W. A.

STATISTICAL APPENDIX

ITALIAN BUDGET SUMMARY

(billion lire)

Table A

Fiscal year beginning 1st July	Revenue			Expenditure			Deficit			
	Assessed		Collected (a)	Obligated		Paid out (a)	Obligated			Cash
	Current	Movement of capital		Current	Movement of capital		Current	Movement of capital	Total	
1948-49	1,015	45	1,020	1,519	98	1,440	— 504	— 53	— 557	— 402
1949-50	1,419	252	1,618.2	1,716	232	1,703.9	— 297	+ 20	— 277	— 85.7
1950-51	1,720	272	1,658.4	1,894	319	1,820.0	— 174	— 47	— 221	— 161.6
1951-52	1,737	336	1,976.4	2,129	305	2,308.4	— 392	+ 31	— 361	— 332.0
1952-53	1,806	305	2,402.0	2,302	119	2,639.4	— 495	+ 185	— 310	— 237.4
1953-54	2,000	338	2,300.3	2,325	182	2,433.8	— 325	+ 156	— 169	— 133.5
1954-55	2,263	302	2.497,6	2,673	116	2,517.4	— 410	+ 186	— 224	— 19.8
1955-56	2,510	242	2,654.8	2,810	91	2,809.4	— 300	+ 151	— 149	— 154.6
1956-57 (b)	2,648	29.5	...	2,921	78.9	...	— 273	— 49.4	— 322.4	—

(a) Current revenue (or payment) and movement of capital; on year account and arrears.
(b) Estimated at October 31, 1956.
Source: *Conto Riassuntivo del Tesoro.*

ITALIAN DOMESTIC PUBLIC DEBT

(billion lire - Index Numbers, 1948=100)

Table B

End of period	Consolidated debt				Floating debt					Treasury notes	Total of domestic public debt	
	Unredeemable		Redeemable		Treasury bills	Interest bearing current accounts	Advances by the Bank of Italy	Total				
	Amount	I.N.	Amount	I.N.				Amount	I.N.		Amount	I.N.
1948 - June . . .	53	100	419	100	483	295	473	1,251	100	7.1	1,730.1	100
1952 - June . . .	53	100	820	196	920	822	471	2,213	177	15.0	3,110	178
1953 - June . . .	53	100	1,025	245	908	998	449	2,355	188	38.2	3,471	201
1954 - June . . .	53	100	1,212	289	998	1,052	538	2,589	207	46.5	3,811	220
1955 - June . . .	53	100	1,498	357	1,064	1,016	570	2,650	212	56.4	4,257	246
1956 - June . . .	53	100	1,704	407	1,141	1,118	512	2,771	221	46.7	4,575	264
July . . .	53	100	1,704	407	1,140	1,110	478	2,728	218	46.7	4,532	262
August . .	53	100	1,704	407	1,143	1,142	448	2,733	218	46.7	4,537	262
September .	53	100	1,712	409	1,156	1,162	481	2,799	224	46.7	4,610	266
October . .	53	100	1,712	409	1,155	1,164	448	2,767	221	46.7	4,579	265

Source: *Conto riassuntivo del Tesoro.*

DEPOSITS AND CURRENT ACCOUNTS IN ITALIAN BANKING SYSTEM AND POSTAL SAVINGS BANKS

(Index numbers, 1938=1)

Table C

End of period	Banking System (a)						Postal Savings Banks						
	Deposits		Current Accounts (b)		Total		Deposits		Current Accounts		Total		Percent ratio to deposits and c/a of banking system
	Billion lire	Index numbers	Billion lire	Index numbers	Billion lire	Index numbers	Billion lire	Index numbers	Billion lire	Index numbers	Billion lire	Index numbers	
1953 December	2,021	53	1,893	111	3,915	71	1,147	39	276	250	1,423	47	36.3
1954 December	2,341	61	2,132	125	4,473	81	1,263	43	252	229	1,515	50	33.8
1955 December	2,722	71	2,432	143	5,154	93	1,308	44	277	251	1,585	52	30.7
1956 March	2,805	73	2,407	141	5,212	94	1,383	47	249	226	1,632	54	31.3
June	2,885	75	2,457	144	5,342	97	1,382	47	244	222	1,626	54	30.4
July	2,929	77	2,454	144	5,383	97	1,383	47	278	253	1,661	55	30.8
August	2,969	78	2,470	145	5,439	98	1,387	47	300	273	1,688	56	31.0
September	3,001	79	2,528	149	5,529	100	1,389	48	298	271	1,687	56	30.5
October	3,022	79	2,546	150	5,568	101	...	..	..	...	...	..	...

(a) The data refer to 365 banks (commercial and savings banks) which hold about 99% of the total deposits collected by all Italian banks.
(b) Inter-bank current accounts are excluded.
Source: *Bollettino* of the Bank of Italy.

DEPOSITS, CURRENT ACCOUNTS AND MAIN ASSETS OF ITALIAN BANKS (a)

(millions of lire) **Table D**

Items	31.3.55	30.6.55	30.9.55	31.12.55	31.3.56	30.6.56	30.9.56
Amount outstanding							
Deposits and current accounts	4,547,843	4,620,759	4,853,280	5,153,823	5,241,179	5,342,352	5,509,431
Mains assets of the Italian Banks:							
Cash	154,935	179,172	173,267	224,263	163,726	184,877	169,154
Banks' deposits with the Bank of Italy	524,202	498,048	594,848	554,508	589,418	509,442	606,133
Banks' deposits with Treasury and other Institutions	261,631	250,888	288,304	293,566	291,279	291,236	320,493
Government Securities (b)	904,562	911.657	930,145	931,369	1,011,845	1,068,740	1,074,299
Credits to clients (c)	3,651,060	3,805,961	3,971,541	4,278,127	4,288,226	4,474,904	4,615,567
Index Numbers: 31-12-1948 = 100							
Deposits and current accounts	299.1	303.9	319.2	338.9	344.7	351.4	363.7
Mains assets of the Italian Banks:							
Cash	190.1	220.6	213.3	276.1	201.6	227.6	208.3
Banks' deposits with the Bank of Italy	287.3	272.9	326.0	303.9	323.0	279.0	332.2
Banks' deposits with Treasury and other Institutions	314.8	301.9	346.9	353.2	350.5	350.4	385.6
Government Securities (b)	229.9	231.7	236.4	236.7	257.2	271.6	273.1
Credits to clients (c)	323.3	337.0	351.7	378.8	379.7	396.2	408.7
% of deposits and current a/cs							
Mains assets of the Italian Banks:							
Cash	3.4	3.9	3.6	4.4	3.1	3.5	3.1
Banks' deposits with the Bank of Italy	11.5	10.8	12.5	10.8	11.2	9.5	11.0
Banks' deposits with Treasury and other Institutions	5.8	5.4	5.9	5.7	5.5	5.4	5.8
Government Securities (b)	19.8	19.7	19.1	18.1	19.3	20.0	19.4
Credits to clients (c)	80.2	81.1	81.8	83.1	82.2	83.7	83.5

(a) The data refer to 365 banks (commercial and savings banks) which hold about 99% of the total deposits collected by all Italian banks.

(b) Treasury bills and other Government securities. Entered at market values.

(c) Includes: bills on hand, rediscount at the Bank of Italy, contangoes, advances, current accounts, credits abroad, loans recoverable on salaries, loans against promissory notes, loans on pawn, mortgage loans, current accounts with sections for special credits, non-Government securities, participations.

Source: *Bollettino* of the Bank of Italy.

NOTE CIRCULATION, PRICES, WAGES AND SHARE QUOTATIONS IN ITALY

(Index Numbers, 1938 = 100) **Table E**

Year or month	Note Circulation (a)		Wholesale prices (c)		Cost of Living (c)	Wage rates in industry (c)	Share quotations (b)	Fine gold	
	Amount (b) (billion lire)	Index	All commodities	Foodstuffs				Price of one gram (lire) (d)	Index
1953 - December	1,487.9	6,612	5,256	5,659	5,678	7,573	2,390.9	720	2,769
1954 - December	1,578.4	7,015	5,350	5,921	5,882	8,012	3,089.7	722	2,776
1955 - December	1,712,2	7,609	5,366	6,029	6,057	8,158	3,749.3	724	2,784
1956 - March	1,598.3	7,103	5,426	6,218	6,254	8,171	3,575.2	725	2,788
June	1,589.3	7,063	5,369	6,155	6,299	8,620	3,327.3	715	2,750
July	1,642.5	7,300	5,331	6,035	6,285	8,620	3,442.4	714	2,746
August	1,636.3	7,272	5,307	5,995	6,288	8,671	3,633.0	717	2,758
September	1,669.7	7,421	5,328	6,037	6,305	8,758	3,579.1	718	2,761
October	1,685.4	7,482	5,343	6,074	6,270	8,758	3,579.8	718	2,763

(a) End of year or month. Includes: Bank of Italy notes and Treasury notes; (b) *Bollettino* of the Bank of Italy; (c) *Bollettino Mensile di Statistica* issued by the Central Institute of Statistics; (d) Business Statistics Centre of Florence.

PRICES AND YIELDS OF ITALIAN SECURITIES BY MAIN CATEGORIES

(annual or monthly averages)

Table F

Year or month	Government Securities								Shares	
	Bonds				9-year Treasury Bonds		Average			
	Consolidated		Redeemable							
	Price (index number '38=100)	Yield (per cent per annum)	Price (index number '38=100)	Yield (per cent per annum)	Price (index number '38=100)	Yield (per cent per annum)	Price (index number '38=100)	Yield (per cent per annum)	Price (index number '38=100)	Yield (per cent per annum)
1954 - a. av. . .	99.4	5.43	88.7	6.38	85.0	6.22	87.8	6.21	2,596.4	5.98
1955 - a. av. . .	97.1	5.56	87.1	6.50	82.7	6.40	85.3	6.39	3,654.1	4.64
1955 - March . .	97.3	5.55	87.1	6.50	83.2	6.36	85.8	6.35	3,237.5	5.07
June . . .	98.2	5.50	87.6	6.46	83.0	6.37	85.7	6.36	3,562.7	4.75
September .	96.3	5.61	88.2	6.42	82.9	6.38	85.7	6.36	4,138.2	4.11
December .	95.9	5.63	84.7	6.68	79.8	6.63	82.6	6.60	3,749.3	4.63
1956 - March . .	95.4	5.66	83.6	6.77	79.1	6.69	81.7	6.67	3,575.2	4.90
June . . .	92.3	5.85	81.7	6.93	76.3	6.93	79.0	6.90	3,327.3	5.44
July . . .	90.9	5.94	82.0	6.90	76.3	6.93	79.0	6.90	3,442.4	5.32
August . .	89.3	6.05	81.0	6.99	75.4	7.02	78.0	6.99	3,633.0	5.04
September .	88.4	6.11	80.6	7.02	73.7	7.18	76.3	7.14	3,579.1	5.12
October . .	88.5	6.10	81.3	6.96	73.5	7.20	76.2	7.15	3,579.8	5.18

Source: *Bollettino* of the Bank of Italy.

WHOLESALE PRICES BY GROUPS OF COMMODITIES

(Index Numbers, 1938=100)

Table G

Year or month	All Commodities	Foodstuffs		Textiles	Hides, Skins and Footwear	Raw materials, metal and engineering products	Fuels and lubricants	Chemical raw materials and products	Lumber	Paper goods	Bricks, Lime and Cement	Glass
		Vegetable	Animal									
1952 a. av.	5,270	4,869	6,796	6,343	4,245	6,767	4,440	5,717	8,343	6,246	7,216	4,707
1953 a. av.	5,250	5,331	6,433	5,894	4,066	5,758	4,080	5,255	8,397	5,279	7,209	4,549
1954 a. av.	5,293	5,265	6,959	5,691	3,804	5,414	4,240	5,073	8,510	5,380	7,261	4,329
1955 a. av.	5,320	5,368	7,012	5,509	3,473	5,756	4,357	5,224	9,410	5,664	7,237	4,206
1956 March	5,426	5,892	6,944	5,435	3,445	5,918	4,612	5,461	9,712	5,698	7,097	4,206
June	5,369	5,851	6,827	5,282	3,416	5,850	4,608	5,387	9,762	5,693	7,091	4,206
July	5,331	5,668	6,864	5,275	3,396	5,839	4,604	5,372	9,796	5,521	7,089	4,206
August	5,307	5,566	6,981	5,254	3,397	5,874	4,616	5,369	9,828	5,532	7,083	4,206
Sept.	5,328	5,546	7,182	5,250	3,480	5,903	4,642	5,341	9,828	5,547	7,069	4,171
October	5,343	5,549	7,309	5,275	3,468	5,032	4,712	5,305	9,839	5,553	7,039	4,771

Source: *Bollettino Mensile di Statistica.*

WAGES AND SALARIES IN ITALY

(gross remunerations - inclusive of family allowances)

(Index Numbers, 1938=100)

Table H

Categories	1955	1955			1956			
	A. Av.	March	June	Sept.	March	June	Sept.	Oct.
Industry:								
Specialized workers	7,055	7,025	7,027	7,070	7,126	7,513	7,655	7,655
Skilled workers	7,775	7,741	7,746	7,790	7,850	8,291	8,417	2,417
Ordinary workers and semi-skilled labourers	8,289	8,256	8,257	8,304	8,371	8,846	8,995	8,995
Labourers	9,010	8,972	8,981	9,029	9,097	9,571	9,713	9,713
General index of Industry	*8,092*	*8,058*	*8,062*	*8,108*	*8,171*	*8,620*	*8,758*	*8,758*
Agriculture	*8,961*	*8,892*	*8,920*	*9,044*	*9,068*	*9,383*	*9,383*	*9,403*
Government Civil Employees:								
Group A (a)	5,674	4,703	5,611	5,949	6,000	6,000	6,424	6,424
Group B (b)	5,312	4,494	5,259	5,532	5,569	5,569	5,972	5,972
Group C (c)	6,390	5,347	6,320	6,672	6,714	6,714	7,450	7,450
Subordinate staff	7,030	6,057	6,991	7,280	7,319	7,319	7,800	7,800
General Index of Government Civil Employees	*6,047*	*5,090*	*5,988*	*6,307*	*6,349*	*6,349*	*6,893*	*6,893*

(a) Administrative grade; (b) Executive grade; (c) Clerical grade.

Source: *Bollettino Mensile di Statistica.*

NATIONAL INDEX OF LIVING COST

(1938=100) **Table I**

Year or month	All Items	Foodstuffs	Clothing	Heating and lighting	Housing	Miscellaneous
1952 - a. av. . . .	5,546	6,541	6,415	4,031	1,565	5,501
1953 - a. av. . . .	5,654	6,680	6,224	4,091	1,720	5,549
1954 - a. av. . . .	5,806	6,875	6,308	4,074	1,826	5,640
1955 - a. av. . . .	5,969	7,059	6,287	4,075	2,088	5,764
1956 - March . . .	6,254	7,375	6,262	4,094	2,644	5,841
June	6,299	7,433	6,258	4,109	2,683	5,849
September . .	6,305	7,409	6,265	4,157	2,723	5,962
October . . .	6,270	7,347	6,278	4,167	2,723	5,997

Source: *Bollettino Mensile di Statistica*.

PERSONS REGISTERED AT LABOUR EXCHANGE OFFICES (*)

Table J

End of period	Class I (a)	Class II (b)	Class III (c)	Class IV (d)	Class V (e)	Total	
							of which women
1955 - March	1,342,076	619,090	146,738	59,464	50,710	2,218,078	707,093
June	1,223,867	590,157	140,477	58,551	47,915	2,060,967	724,320
September	1,191,364	577,530	133,883	57,963	47,483	2,008,223	692,653
December	1,439,688	612,833	131,938	62,626	51,942	2,299,027	718,789
1956 - March	1,479,335	660,213	124,855	66,250	55,718	2,386,371	723,604
June	1,238,082	599,641	118,179	63,220	50,399	2,069,521	711,811
July	1,216,456	590,602	116,691	61,258	47,771	2,022,778	703,545
August	1,185,274	584,119	113,053	61,716	48,684	1,992,846	681,119
September	1,190,860	585,322	111,414	63,216	49,781	2,000,593	681,481
October	1,209,215	587,733	111,860	63,107	50,145	2,022,059	687,886

(*) On the discrepancies between actual unemployed and persons registered at Labour Exchange Offices, see, *i.a.*, A. MOLINARI, *Unemployment Statistics in Italy with Special Reference to Southern Italy*, this Review, No. 21, 1952.

(a) Unemployed workers who were previously employed. (b) Young persons under 21 years of age, and other persons in search of their first employment, or discharged from the armed forces. (c) Women engaged in house work who are seeking their first employment. (d) Pensioners in search of employment. (e) Employed workers in search of other employment.

Source: Ministry of Labour.

ITALIAN INDUSTRIAL PRODUCTION INDEXES

(unadjusted, 1938=100) **Table K**

Year or month	General Index	Mining	Manufactures										Electric Power
			Total	Food	Textiles	Lumber	Paper	Metallurgy	Engineering	Building Material	Chemicals	Rubber	
1952 - a. av. . . .	142	145	136	146	105	62	113	150	142	...	172	142	193
1953 - a. av. . . .	165	179	159	152	115	167	129	149	170	...	225	160	206
1954 - a. av. . . .	181	200	176	158	117	173	134	173	178	174	278	194	219
1955 - a. av. . . .	196	241	190	163	104	176	144	212	203	207	313	202	233
1956 - March . . .	215	312	209	175	115	169	166	221	237	217	346	215	237
June	214	282	208	162	111	176	161	239	240	230	349	162	248
July	225	301	218	157	122	182	168	249	253	238	362	198	262
August . . .	184	289	174	145	78	149	138	211	149	234	346	85	239
September . .	221	318	214	170	117	185	166	243	237	236	357	182	251
October . . .	229	352	222	186	124	184	184	237	243	238	372	201	259

Source: *Bollettino Mensile di Statistica*.

SELECTED BUSINESS INDICATORS

Index Numbers, 1948 (annual average)=100 **Table L**

Month	Number of rooms planned	Goods loaded and unloaded in Italian ports	Number of telegrams dispatched	Sales in department stores	Automobil Production		Tourist movement	Railways traffic
					Cars	Lorries		
1955 - March	614.4	229.7	166.2	403.2	460.5	280.8	263.6	133.4
June	578.0	233.2	168.5	576.4	574.9	236.9	827.5	133.9
September	441.4	248.6	185.9	500.3	671.1	254.7	1,146.9	154.9
December	1,081.1	244.4	181.9	1,065.7	489.0	225.9	284.0	140.3
1956 - March	659.3	263.3	182.6	524.9	694.6	249.0	299.5	144.4
June	462.9	259.0	196.7	680.2	734.2	272.8	1,052.2	155.2
July	523.9	258.2	196.2	595.2	804.9	273.2	1,544.6	148.4
August	342.3	252.7	193.5	470.5	269.2	130.0	2,198.1	147.6
September	460.6	270.0	207.2	574.2	761.2	257.4	1,279.3	156.6
October	589.6	286.2	210.5	806.0	...	...	579.8	...

Source: *Previsioni a breve termine.*

ITALY'S IMPORTS AND EXPORTS, 1954, 1955 AND 1956

(million lire) **Table M**

Month	1954			1955			1956		
	Imports	Exports	Deficit	Imports	Exports	Deficit	Imports	Exsports	Deficit
January	134,482	80,374	- 54,108	136,833	77,160	- 59,673	164,463	98,987	- 65,476
February	126,946	85,258	- 41,688	133,110	84,085	- 49,025	144,275	96,574	- 47,701
March	144,344	91,475	- 52,869	144,062	93,821	- 50,241	169,797	117,234	- 52,563
April	133,381	81,325	- 52,056	139,937	90,178	- 49,759	152,621	103,244	- 49,377
May	129,675	80,076	- 49,599	148,058	95,101	- 52,957	169,512	106,491	- 63,021
June	122,235	81,356	- 40,879	147,386	95,327	- 52,059	176,744	106,660	- 70,084
July	118,467	87,982	- 30,485	142,635	104,174	- 38,461	169,366	116,866	- 52,500
August	109,197	81,900	- 27,297	127,229	98.211	- 29,018	148,489	108,345	- 40,144
September	112,660	86,126	- 26,534	136,168	108,963	- 27,205	138,937	109,078	- 29,859
Total (January-Sept.)	1,131,387	755,872	- 375,515	1,255,418	847,020	- 408,398	1,434,203	963,478	- 470,725
Annual total	1,500,611	941,780	- 558,822	1,691,164	1,160,688	- 530,496			

Source: *Statistica del Commercio con l'Estero.*

EXCHANGE RATES IN ITALY

(Italian lire for one unit of foreign currencies) **Table N**

Annual or monthly averages	U. S. dollar (a)	Pound sterling	Swiss franc	French franc	Belgian franc	Swedish crown	Norwegian crown	Danish crown	Dutch florin	German mark
1954 - a. a.	624.83	1,749.53	—	1.78	12.50	120.78	87.48	90.46	164.44	148.77
1955 - a. a.	624.85	1,750.28	145.77	1.79	12.52	120.92	87.52	90.52	164.68	148.90
1955 - March	624.92	1,749.77	145.76	1.79	12.50	120.80	87.49	90.47	164.45	148.79
June	624.88	1,749,67	145.79	1.79	12.50	120.80	87.49	90.47	164.45	148.79
September	624.82	1,740.16	145.80	1.79	12.51	120.84	87.03	90.02	164.40	148.80
December	624.80	1,758.21	145.80	1.79	12.58	120.08	87.87	90.95	164.46	149.79
1956 - March	624.85	1,754.20	145.81	1.78	12.57	120.73	87.67	90.65	164.83	149.66
June	624.86	1,755.52	145.80	1.78	12.58	120.91	87.55	90.47	164.40	149.83
July	624.82	1,746.70	145.81	1.78	12.56	120.13	87.36	90.34	164.18	149.60
August	624.82	1,745.41	145.80	1.78	12.55	120.21	87.33	90.24	164.08	149.38
September	624.85	1,742.50	145.81	1.78	12.52	120.94	87.22	90.12	163.98	149.03
October	624.85	1,752.44	145.79	1.78	12.55	121.14	87.65	90.62	164.85	149.68

(a) Italcambi buying rate.

Source: *Bollettino* of the Bank of Italy.

Table O

CAPITAL, SHARE PRICES, AND DIVIDENDS OF SOME ITALIAN COMPANIES QUOTED ON STOCK EXCHANGES

Companies	Face Capital (thousands of lire)	Nominal value of shares (lire)	Last Dividend		Price of shares at Dec. 31, 1956 (1) (lire)	Percentage of last dividend on price at Dec. 31, 1956
			Date of payment	Amount (lire)		
Financial and Insurance						
Finmare - Soc. Finanz. Marittima	18,000,000	500	2.11.55	32.50	456.—	7.13
Strade Ferrate Meridionali (Bastogi)	36,000,000	1,000	2. 5.56	80.—	1,573.—	5.09
S.T.E.T. - Soc. Torinese Eserc. Telefonici	65,000,000	2,000	16. 7.56	150.—	2,381.—	6.30
La Centrale	25,000,000	5,000	24. 1.56	400.—	8,635.—	4.63
Pirelli & C.	1,400,000	400	3. 4.56	100.—	2,849.—	3.51
Assicurazioni Generali	12,000,000	6,000	2. 7.56	500.—	21,110.—	2.37
Riunione Adriatica di Sicurtà	4,320,000	2,250	6. 7.56	210.—	6,400.—	3.28
Textiles						
Snia Viscosa	21,000,000	1,200	2. 5.56	100.—	1,450.—	6.90
Chatillon - Soc. Ital. Fibre Tessili Art.	6,000,000	1,000	2. 5.56	100.—	—	—
Linificio e Canapificio Nazionale	3,400,000	500	13. 2.56	35.—	475.—	7.37
Cucirini Cantoni Coats	6,000,000	1,000	9. 4.56	350.—	6,460.—	5.42
Cotonificio Cantoni	3,600,000	1,500	20. 4.56	300.— (a)	9,680.—	3.10
Lanificio Rossi	6,000,000	4,000	12. 4.55	700.—	—	—
Manifattura Lane in Borgosesia	1,500,000	4,000	3. 5.56	500.—	—	—
Minerals, Metals and Engineering						
Monte Amiata	3,280,000	2,000	5. 5.56	350.—	8,940.—	3.91
Stabilimento Minerario del Siele	1,647,360	1,000	2. 5.56	320.— (b)	7,850.—	4.08
Finsider	50,490,000	500	9. 7.56	40.—	614.—	6.51
Ilva Alti Forni e Acciaierie d'Italia	32,000,000	400	16. 4.55	28.—	518.50	5.40
Dalmine	12,000,000	500	16. 4.56	90.—	1,660.—	5.42
Terni	26,250,000	250	26. 4.56	15.—	307.—	4.89
F.I.A.T.	76,000,000	500	2. 5.56	70.—	1,286.—	5.44
Public Utilities						
Soc. Edison	160,000,000	2,000	4. 4.56	130.	2,997.—	4.34
C.I.E.L.I.	22,500,000	2,250	4. 4.56	135.—	3,648.—	3.70
Soc. Adriatica di Elettricità	54,000,000	1,000	16. 7.56	70.—	1,337.—	5.24
S.I.P. - Soc. Idroelettrica Piemonte	68,948,876	1,200	20. 4.56	84.—	1,502.—	5.59
Vizzola - Soc. Lombarda Distr. Energia Elettrica	25,137,000	2,250	16. 4.56	180.—	3,615.—	4.98
Soc. Meridionale di Elettricità	61,236,000	1,000	28. 6.56	75.—	1,480.—	5.07
Soc. Elettrica Selt-Valdarno	32,000,000	2,000	20. 4.56	160.—	2,825.—	5.66
Soc. Romana di Elettricità	32,000,000	2,000	20. 4.56	160.—	2,750.—	5.82
Soc. Telefonica Tirrena - Serie A	20,250,000	2,250	3. 5.56	140.— (c)	2,342.—	5.98
Soc. Telefonica Tirrena - Serie B		2,250	3. 5.56	140.— (c)	2,350.—	5.96
Italcable	4,900,000	3,500	7. 5.56	250.—	—	—
Foodstuffs						
Eridania - Zuccherifici Nazionali	18,000,000	2,000	7. 5.56	800.—	5,180.—	5.15
Soc. Italiana Industria Zuccheri	7,200,000	4,000	7. 5.56	900.—	19,400.—	4.64
Chemicals						
Montecatini	84,000,000	1,000	3. 4.56	115.—	2,795.—	4.11
A.N.I.C. - Az. Naz. Idrogenazione Combustbili	7,200,000	1,000	2. 5.56	90.—	2,500.—	3.60
Soc. Ital. per il Gas	19,900,000	1,000	5. 7.56	80.—	1,429.—	5.60
Sundry						
Soc. Generale Immobiliare	16,000,000	250	2. 5.56	30.—	574.—	5.23
Ist. Romano dei Beni Stabili	6,557,280	2,000	21. 5.56	240.—	4,730.—	2.54
Pirelli Soc. per Azioni	24,000,000	1,000	3. 4.56	130.—	3,399.—	3.82
Italcementi	12,000,000	2,000	29.10.56	500.—	15,025.—	3.33
Cartiere Burgo	10.000,000	4,000	30. 4.56	500.—	13,910.—	3.59

(1) During the last six months business on the Stock Exchanges has been drastically reduced; this is due to the opposition of the stock-brokers to the new rules for the control of future and contango transactions (Art. 17 of the Act of January 6, 1956, No. 1). Only cash transactions have been transacted, and some securities have not been quoted.

(a) On shares of a nominal value of L. 1,000. (b) On shares of a nominal value of L. 600. (c) On shares of a nominal value of L. 2,000.

MINIMUM AND MAXIMUM QUOTATIONS OF SOME ITALIAN COMPANIES QUOTED ON STOCK EXCHANGES
(Lire)

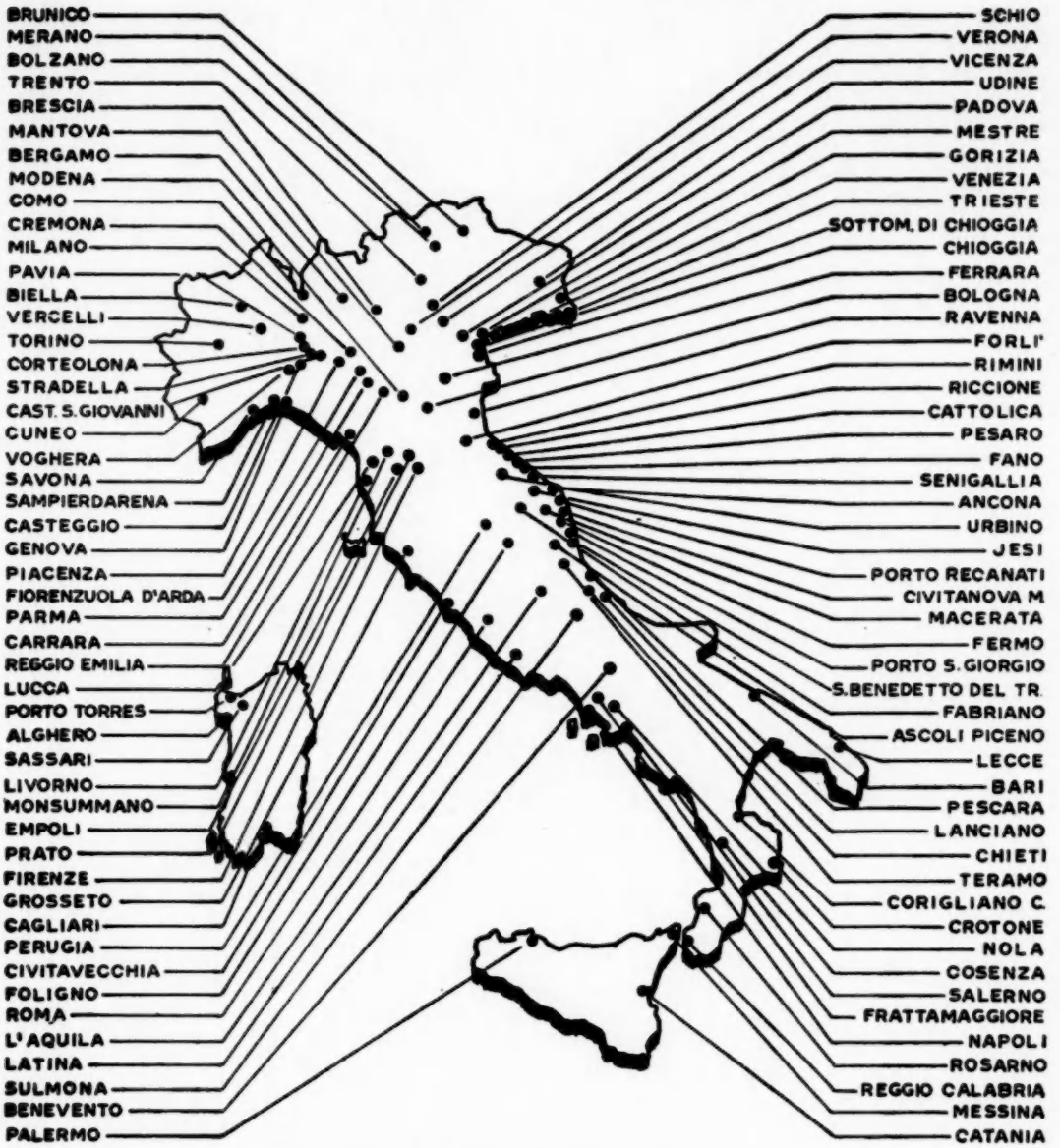
Table P

Companies	1955				1956					
	III Quarter		IV Quarter		I Quarter		II Quarter		III Quarter	
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
Financial and Insurance										
Strade Ferrate Meridionali (Bastogi)	1,870	1,573	1,960	1,545	1,745	1,515	1,790	1,230	1,533	1,230
S.T.E.T. - Soc. Torinese Eserc. Telefonici	2,810	2,380	2,830	2,380	2,550	2,325	2,510	2,200	2,300	2,050
La Centrale	10,650	9,200	10,930	9,000	9,700	8,750	9,275	8,525	8,220	7,000
Pirelli & C.	3,479	2,897	3,503	2,605	3,003	2,540	2,730	2,340	2,900	2,600
Assicurazioni Generali	22,090	18,900	22,350	18,300	20,900	18,250	20,450	18,000	20,100	19,000
Riunione Adriatica di Sicurtà	8,330	7,165	8,225	6,790	7,125	6,020	6,860	5,700	6,280	5,675
Textiles										
Snia Viscosa	1,845	1,425	1,945	1,500	1,740	1,442	1,590	1,240	1,490	1,285
Chatillon - Soc. Ital. Fibre Tessili Art.	2,800	2,110	2,640	2,150	2,550	2,350	2,500	2,090	2,600	1,950
Linificio e Canapificio Nazionale	958	639	903	592	695	507	556	492	500	485
Cotonificio Vittorio Olcese	1,500	860	1,290	1,000	1,020	805	825	627	649	636
Cucirini Cantoni Coats	7,220	6,200	6,975	6,310	6,660	6,200	6,530	6,150	6,530	6,300
Cotonificio Cantoni	12,300	10,600	11,510	9,700	10,450	9,720	10,400	9,700	10,050	9,700
Lanificio Rossi	11,130	7,550	7,800	6,050	7,000	5,200	5,235	3,850	4,050	3,950
Minerals, Metals and Engineering										
Monte Amiata	8,650	7,380	9,450	7,500	8,100	6,600	8,550	6,700	8,450	7,000
Ilva Alti Forni e Acciaierie d'Italia	658	440	668	540	636	558	619	395	510	400
Dalmine	1,762	1,523	1,750	1,400	1,693	1,446	1,580	1,388	1,690	1,495
Terni	415	270	428	298	326	279	293	232	291	242
F.I.A.T.	1,821	1,497	1,841	1,400	1,645	1,339	1,460	1,000	1,350	1,100
Ansaldo	1,450	950	1,260	750	940	690	802	500	—	—
Bianchi Edoardo	763	574	721	523	596	512	560	477	556	510
Public Utilities										
Società Edison	3,045	2,723	3,142	2,680	2,910	2,585	2,903	2,450	2,840	2,500
C.I.E.L.I.	3,340	2,850	3,575	3,080	3,475	3,110	3,460	3,020	3,350	3,130
Soc. Adriatica di Elettricità	1,396	1,248	1,447	1,270	1,363	1,252	1,340	1,210	1,380	1,235
S.I.P. - Soc. Idroelettrica Piemonte	1,545	1,310	1,605	1,400	1,500	1,330	1,447	1,235	1,403	1,250
Soc. Meridionale di Elettricità	1,525	1,295	1,615	1,400	1,462	1,320	1,412	1,210	1,390	1,215
Soc. Elettrica Selt - Valdarno	3,230	2,600	3,350	2,830	3,240	2,990	3,180	2,340	2,885	2,425
Soc. Romana di Elettricità	3,210	2,565	3,250	2,780	3,130	2,805	3,022	2,300	2,800	2,420
Soc. Telefonica Tirrena - Serie B	2,910	2,410	2,990	2,610	2,700	2,495	2,540	2,200	2,400	2,220
Italcable	5,890	5,190	6,370	4,900	5,640	5,260	5,400	4,450	5,070	4,260
Foodstuffs										
Eridania - Zuccherifici Nazionali	26,375	24,400	26,675	20,250	22,700	19,200	23,125	19,000	21,600	19,025
Soc. Italiana Industria Zuccheri	23,450	21,800	22,525	17,400	20,250	15,975	20,525	16,975	19,300	17,400
Chemicals										
Montecatini	3,450	2,794	3,515	2,705	3,010	2,600	2,880	2,095	3,105	2,150
A.N.I.C. - Azienda Naz. Idr. Combustibili	3,227	2,615	3,300	2,500	2,750	2,375	2,685	2,225	2,620	2,250
Società Italiana per il Gas	1,827	1,594	1,832	1,430	1,534	1,380	1,450	1,280	1,380	1,220
Sundry										
Soc. Gen. Immobiliare	852	650	878	670	760	690	730	620	610	450
Istituto Romano dei Beni Stabili	9,690	8,600	10,320	8,800	9,550	8,490	9,025	3,700	4,750	4,020
Pirelli Soc. per Azioni	3,600	3,040	3,630	2,840	3,300	2,846	2,990	2,375	3,080	2,601
Italcementi	14,770	12,290	15,500	13,200	14,420	12,995	13,150	11,890	13,650	11,940
Cartiere Burgo	14,460	12,775	14,625	13,050	13,495	12,500	12,575	11,425	13,000	11,750

Source: *Bollettino Mensile di Statistica.*

BANCA NAZIONALE DEL LAVORO

BRANCHES IN ITALY



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